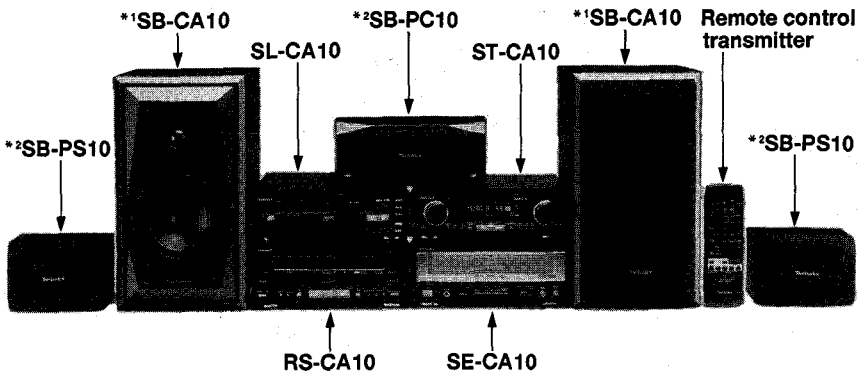
ORDER NO. AD9512272C8

# Service Manual

Amplifier

## SE-CA10

Amplifier




**Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.**

### Colour

(K)...Black Type

### Area

| Suffix for Model No. | Area | Colour |
|---|---|---|
| (E) | Europe. | (K) |
| (EB) | Great Britain. | |
| (EG) | Germany and Italy. | |
| (GC) | Asia, Latin America, Middle Near east and Africa. | |
| (GN) | Oceania. | |

## ■SPECIFICATIONS

### ■ Amplifier section

**Power output**
- **DIN 1 kHz, THD 1%, both channel driven** 2×50 W (6Ω)

**RMS 1 kHz, THD 10%, both channel driven**
- **[For (E, EB, EG, GN) areas]** 2×70 W (6Ω)
- **[For (GC) area]** 2×65W (6Ω)

**PRO LOGIC mode**

**DIN 1 kHz, THD 1%**
- **MAIN (both channels driven)** 2×40 W (6Ω)
- **SURROUND** 40 W (4Ω+4Ω)
- **CENTER** 40 W (8Ω)

**RMS 1 kHz, THD 10%**
- **MAIN (both channels driven)** 2×50 W (6Ω)
- **SURROUND** 50 W (4Ω+4Ω)
- **CENTER** 50 W (8Ω)

**Total harmonic distortion**
- **Rated power at 1 kHz** 1% (6Ω)
- **Half power at 1 kHz** 0.09% (6Ω)

**Load impedance**
- **MAIN** 6Ω – 8Ω
- **SURROUND** 4Ω – 8Ω
- **CENTER** 8Ω

**S/N (rated power)**
- **MAIN** 90 dB

### System: SC-CA10

### ■General

**Power consumption** 235 W

**Power supply**
- **[For (E, EG) areas]** 230 V, AC 50/60 Hz
- **[For (EB, GN) areas]** 230 – 240 V, AC 50/60 Hz
- **[For (GC) area]** 110/127/220/230 – 240 V, AC 50/60 Hz

**Dimensions (W×H×D)** 270×118.5×341.5 mm

**Weight** 5.2 kg

**Note:**

Specifications are subject to change without notice.
Weight and dimensions are approximate.
Total harmonic distortion is measured by the digital spectrum analyzer.

| System | Tuner | CD changer | Amplifier | Cassette deck | Speakers |
|---|---|---|---|---|---|
| **SC-CA10** | ST-CA10 | SL-CA10 | **SE-CA10** | RS-CA10 | *1 SB-CA10<br>*2 SB-PT10<br>(SB-PC10+SB-PS10) |

*1 Made in PAES
*2 For (E, EB, EG) areas....Made in PAES
For (GC, GN) areas....Made in NABEL

**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics®

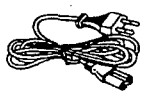
© 1995 Matsushita Electric Industrial Co., Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

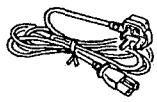
# ■CONTENTS

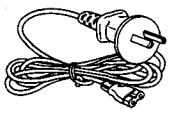

| | Page |
|---|---|
| ACCESSORIES | 2 |
| BEFORE REPAIR AND ADJUSTMENT | 2 |
| PROTECTION CIRCUITRY | 3 |
| CAUTION FOR AC MAIN LEAD | 3 |
| LOCATION OF CONTROLS | 4 |
| INSTALLATION | 4 |
| CONNECTIONS | 5~9 |
| USING THE DOLBY PRO LOGIC SURROUND | 10 |
| ADJUSTING SPEAKER OUTPUT LEVEL | 11 |
| ADJUSTING THE DELAY TIME | 12 |
| ENJOYING WITH SURROUND OR 3 STEREO | 12 |
| OPERATION CHECK AND MAIN COMPONENT REPLACEMENT PROCEDURES | 13~15 |
| REPLACEMENT OF THE FOOT | 16 |
| POWER SOURCE ON/OFF OF THIS UNIT | 16 |
| MEASUREMENTS AND ADJUSTMENTS | 16 |
| SCHEMATIC DIAGRAM | 17~21 |
| PRINTED CIRCUIT BOARD DIAGRAM | 22~25 |
| WIRING CONNECTION DIAGRAM | 25 |
| BLOCK DIAGRAM | 26, 27 |
| CABINET PARTS LOCATION | 28 |
| REPLACEMENT PARTS LIST | 29, 30, 32, 33 |
| RESISTORS AND CAPACITORS | 31, 32 |
| PACKAGING | 33 |


# ■ACCESSORIES

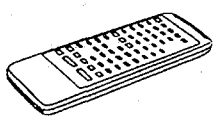
- AC power supply cord
  For (E, EG, GC) areas: (RJA0019-2K)..... 1
  For (EB) area: (RJA0049-K)..... 1
  For (GN) area: (RJA0036-K)..... 1


(RJA0019-2K)

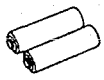

(RJA0049-K)


(RJA0036-K)

- Remote control transmitter
  For (E, EG) areas: (RAK-CH744WH)..... 1
  For (EB, GC, GN) areas:
  (RAK-CH745WH) ..... 1



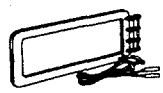
- Batteries
  (UM-4, "AAA", R03)..... 2
  **Note:** These are available on sales route.



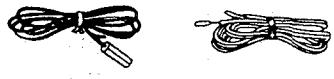
- Flat cable
  Long (REX0661) ..... 1
  Middle (REX0660)..... 1
  Short (REX0608)..... 1

(REX0661) (REX0660) (REX0608)

- AM (LW/MW) loop antenna
  (RSA0012) ..... 1



- FM indoor antenna
  For (E, EB, EG) areas: (RSA0007) ..... 1
  For (GC, GN) areas: (RSA0006)..... 1


(RSA0007) (RSA0006)

- Attachment plug
  For (EB) area only: (SJP9009)..... 1

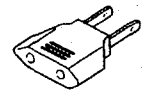
- Mounting screw
  (STN3+12AFZ)..... 1



- Antenna holder
  (RMN0244)..... 1

- Speaker cords
  (REE0393) ..... 2

- Power plug adapter
  For (GC) area only: (SJP5213-1)..... 1



# ■BEFORE REPAIR AND ADJUSTMENT

(1) Turn off the power supply using a 10Ω, 10 W resistor, connect both ends of power supply capacitors (C701, C702) in order to discharge the voltage.
(2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 230 V/240 V/110 V.

| Area | (E) (EG) | | (EB) (GN) | | (GC) | | |
|---|---|---|---|---|---|---|---|
| Power supply voltage | AC 230 V | | AC 240 V | | AC 110 V | | AC 240 V |
| Consumed current 50/60 Hz | 50 Hz | 80~230 mA | 50 Hz | 80~230 mA | 50 Hz | 200~500 mA | 100~250 mA |
| | 60 Hz | 64~184 mA | 60 Hz | 64~184 mA | 60 Hz | 160~400 mA | 80~200 mA |

# ■PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

* No sound is heard when the power is switched ON.
* Sound stops during a performance.

The function of this circuitry is prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

**Note:**

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

# ■CAUTION FOR AC MAIN LEAD

## [(EB) area code mode only]

For your safety, please read the following text carefully.

This applicance is supplied with a moulded three pin mains plug for your safety and convenience.
Ad 5-ampere fuse is fitted in this plug.
Should the fuse need to be replace please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTAd mark ⟨ASTA⟩ or the BSI mark ⟨BSI⟩ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local

**CAUTION!**

IF THE FITTED MOULDED PLUG IS UNSUITABLED FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFETY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

### IMPORTANT

The wire in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

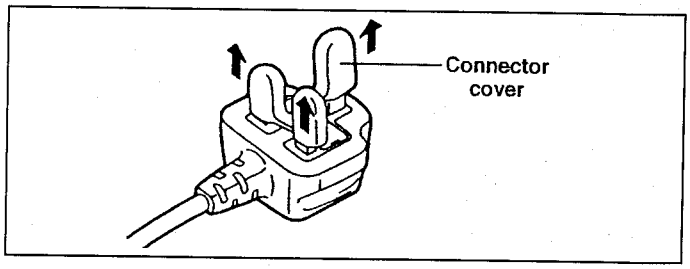
This apparatus was produced to BS 800.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

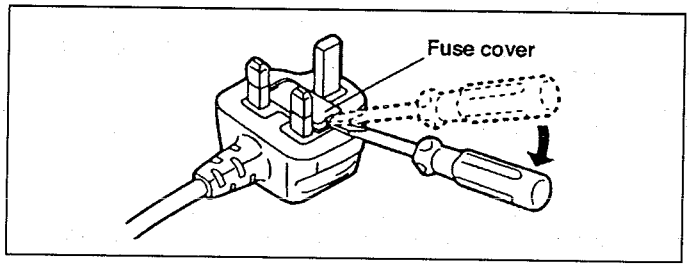
### Before use

Removal the connector cover as follows.

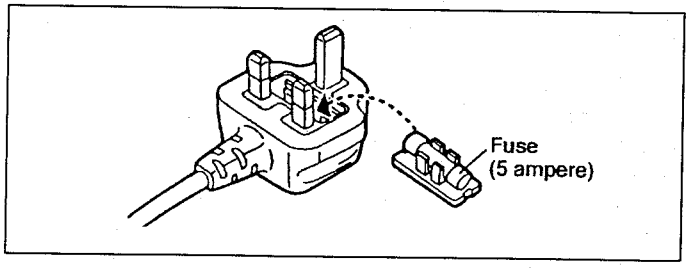



### Hoe to replace the fuse

1. Remove the fuse cover with a screwdriver.

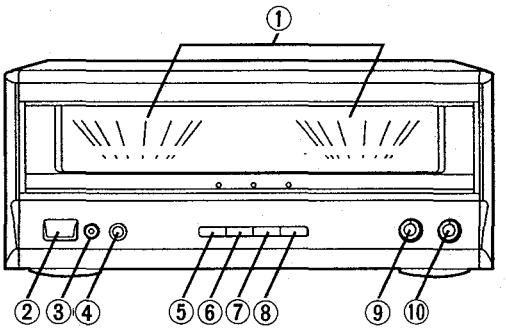



2. Replace the fuse and attach the fuse cover.



# ■LOCATION OF CONTROLS

① **Output power meter**
Indicates the output (watts) of this unit.
② **Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
③ **Standby indicator (STANDBY)**
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.
④ **Headphones jack (PHONES)**
⑤ **DOLBY PRO LOGIC mode select button (MODE)**
⑥ **Test signal button (TEST)**
⑦ **Delay time adjust button (DELAY TIME)**




⑧ **Center mode select button (CENTER MODE)**
⑨ **Bass control (BASS)**
⑩ **Treble control (TREBLE)**

# ■INSTALLATION

## *Stacking the components*

### *Horizontal stacking* A

ⓐ CD changer (SL-CA10)
ⓑ Tuner (ST-CA10)
ⓒ Cassette deck (RS-CA10)
ⓓ Amplifier (SE-CA10)

### *Vertical stacking* B

ⓐ Tuner (ST-CA10)
ⓑ Amplifier (SE-CA10)
ⓒ CD changer (SL-CA10)
ⓓ Cassette deck (RS-CA10)

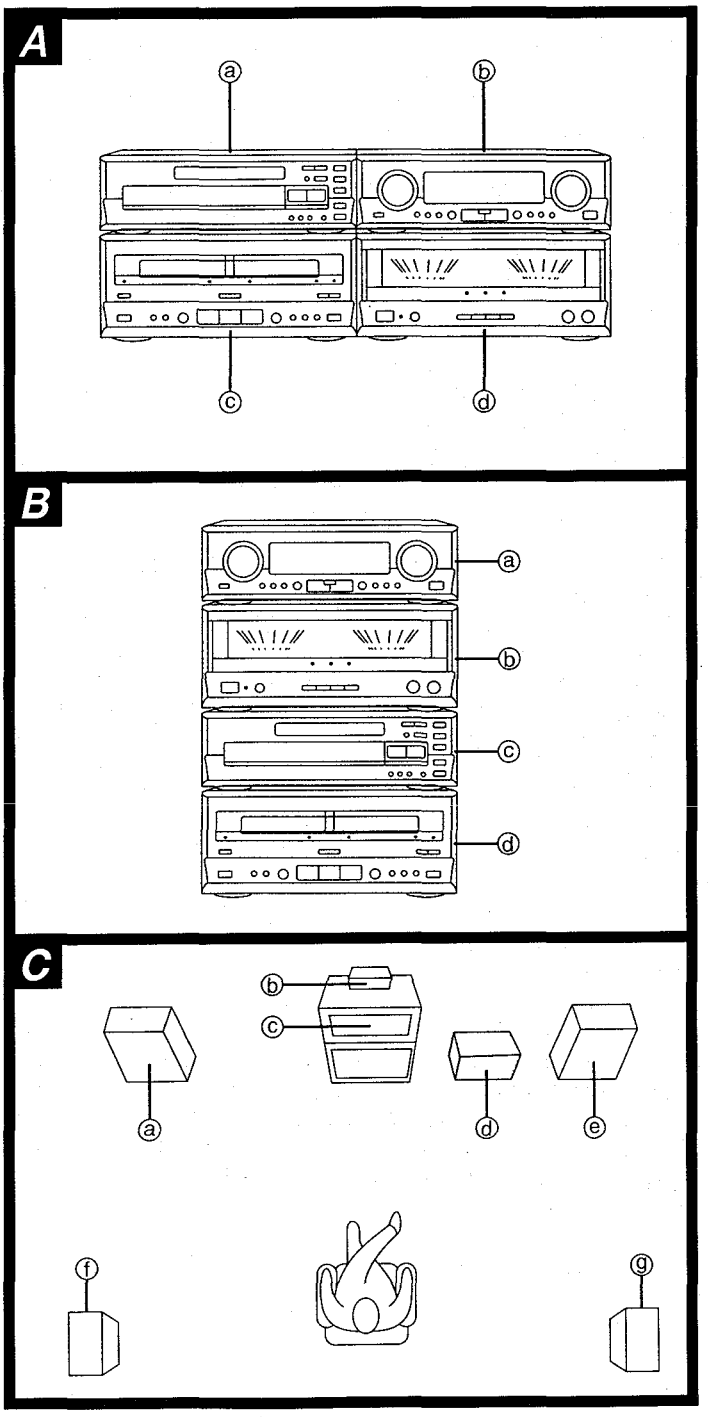
### *Placement of speakers* C

As well as enjoying normal stereo reproduction with the left and right front speakers, a center speaker and surround speakers can also be connected to the unit in order to enjoy the sound performance of DOLBY PRO LOGIC Systems.

We recommend that surround speakers be placed on the side of or slightly behind the listener, and about one meter higher than ear level.
However the position should be adjusted to your personal preference, because the effect varies to some degree depending upon the type of music and the music source.

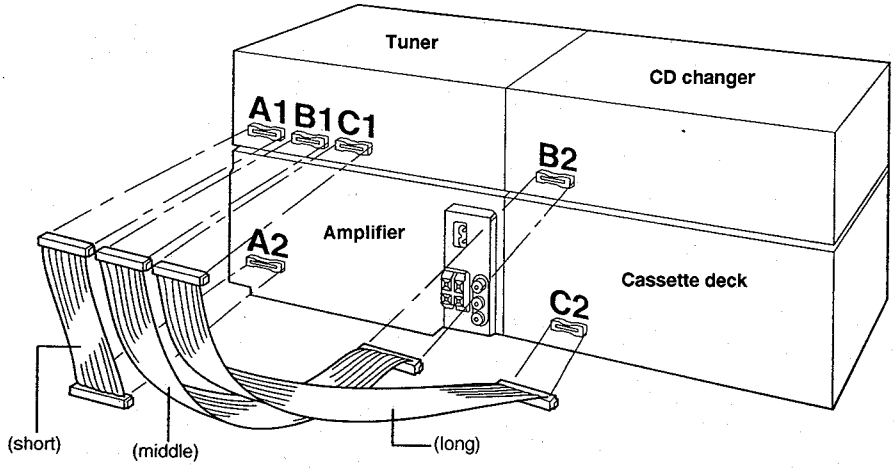
ⓐ Front speaker (Left) (SB-CA10)
ⓑ Center speaker (SB-PC10)
ⓒ TV (not included)
ⓓ This system
ⓔ Front speaker (Right) (SB-CA10)
ⓕ Surround speaker (Left) (SB-PS10)
ⓖ Surround speaker (Right) (SB-PS10)

**Caution**
**Use these speakers only with the recommended system. Failure to do so may lead to damage to the amplifier and/or the speaker, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.**



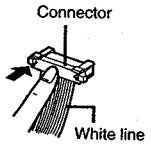
# ■CONNECTIONS

## ● FLat cable (included) connections

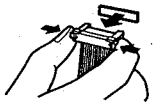



**Before making connections:**
Make sure the white line on the cable is on the right side.

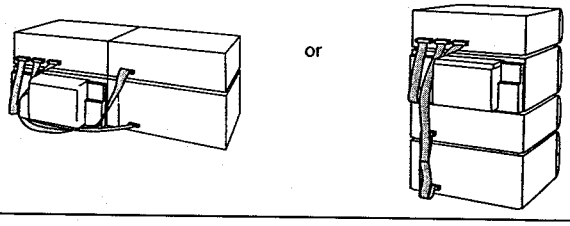
**To unplug cables:**
Hold the connector from both ends.



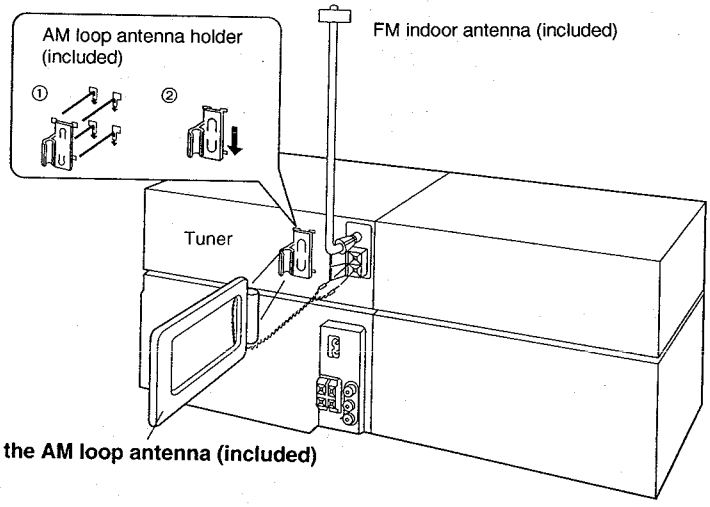

**Note** **Do not try connecting or disconnecting the flat cables while the power is switched to ON.**



**After connection:**
Fold and press the cable as flat to the back of the unit as possible. (To minimize noise pickup while listening an MW/LW broadcast)



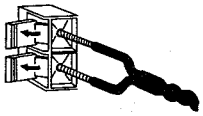

## ● Antenna connections



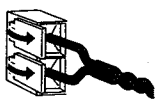

**How to install the AM loop antenna (included)**

① Strip off the outer covering.

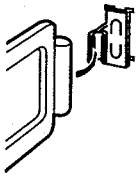
② Insert the wire.



③ Close the lever.



④ Attach the AM loop antenna to the

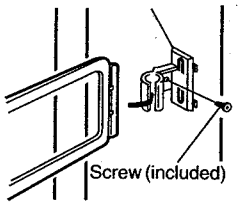


**Note**

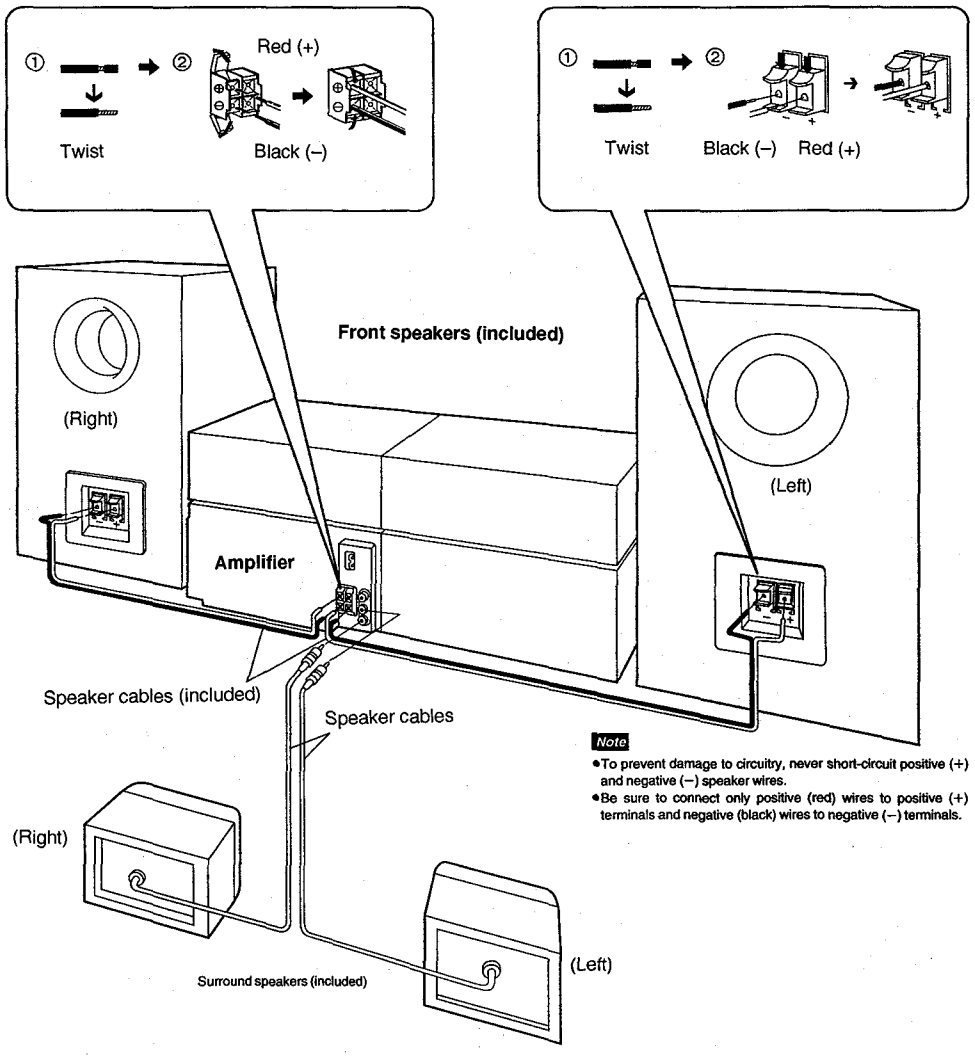
- To minimize noise pickup, bundle the loop antenna cord using a tape or so to keep the flat cables away from the AM loop antenna cord.
- You may attach the antenna holder to a rack or other structure.

**•When mounting the antenna to a column or rack**

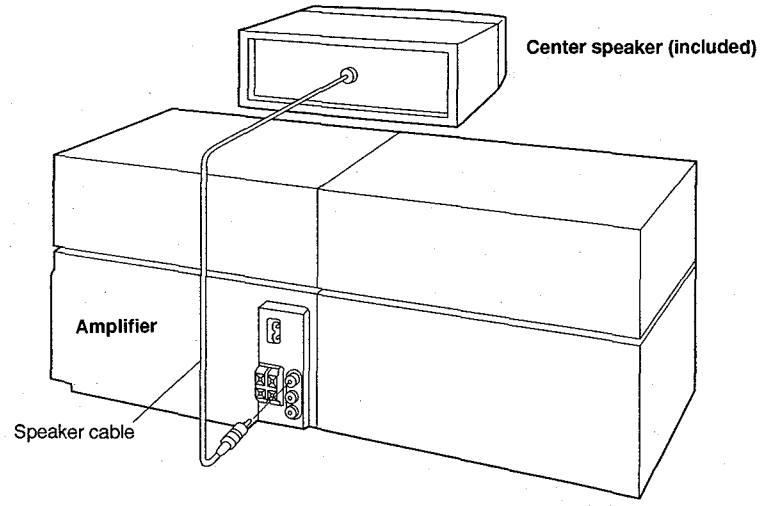
AM loop antenna holder (included)



## ● Connection of front and surround speakers

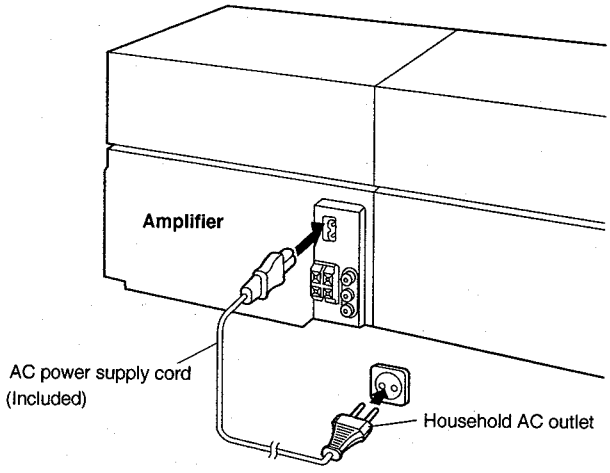



## ● Connection of center speaker

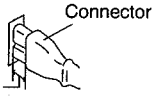


## • Connection of AC power supply cord

• Plug the cord into an outlet only after all other connections have been made.




[For (E, EG, GN) areas.]




**Insertion of Connector:**

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.

**[For (EB) area only]**

**BE SURE TO READ THE CAUTION FOR AC POWER SUPPLY CORD ON PAGE 3 BEFORE THE FOLLOWING CONNECTIONS.**

**[For (GC) area only]**

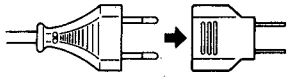
Set the voltage selector to the voltage setting for the area in which the unit will be used.
[Use a minus (–) screwdriver]

***Note***

If the power supply in your area is 117 V or 120 V, set to the "127 V" position.
Note that this unit will be seriously damaged if this setting is not made correctly.

---

If the power plug will not fit your socket, use the power plug adapter (included).



## • Optional antenna connections

### *FM outdoor antenna (not included)* A

The outdoor antenna should be used when using this unit in mountainous areas or in spaces enclosed by reinforced concrete where the FM indoor antenna (included) does not provide satisfactory reception.

***Note***

An outdoor antenna should be installed by a qualified technician only.

### *AM (MW/LW) outdoor antenna (not included)* B

The outdoor antenna should be used when using this unit in mountainous areas or in spaces enclosed by reinforced concrete where the AM loop antenna (included) does not provide satisfactory reception.

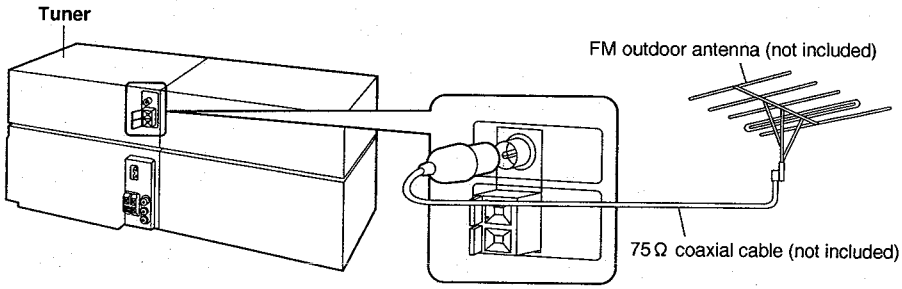
Use 5–12 m of vinyl-sheathed wire horizontally at the window, or a convenient location.

When the unit is not in use, disconnect the outdoor antenna to prevent possible damage from lightning. Never use an outdoor antenna during an electrical storm.

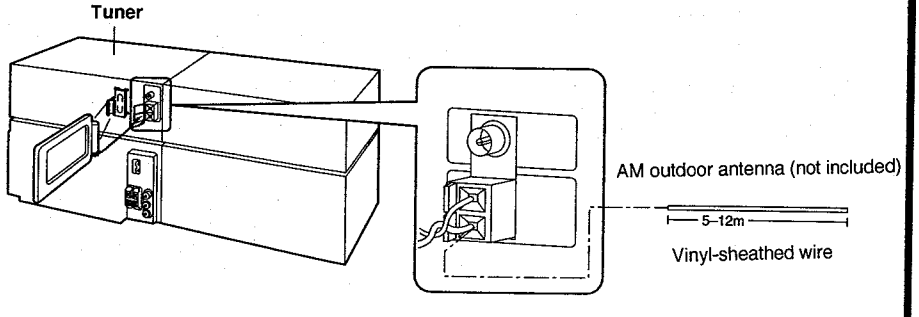
***Note***

Be sure to connect the AM loop antenna even when an outdoor antenna is used.

**A**



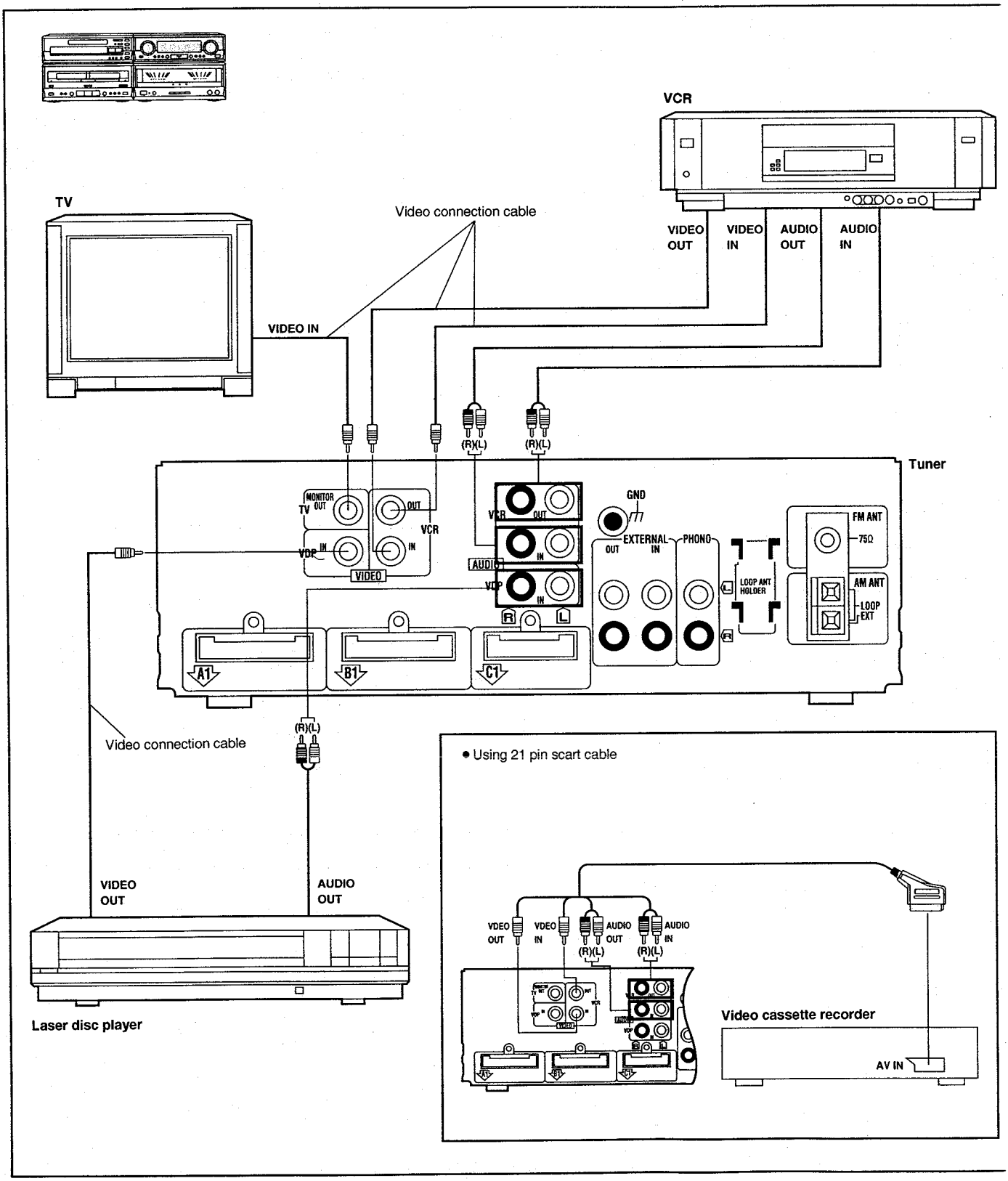

**B**

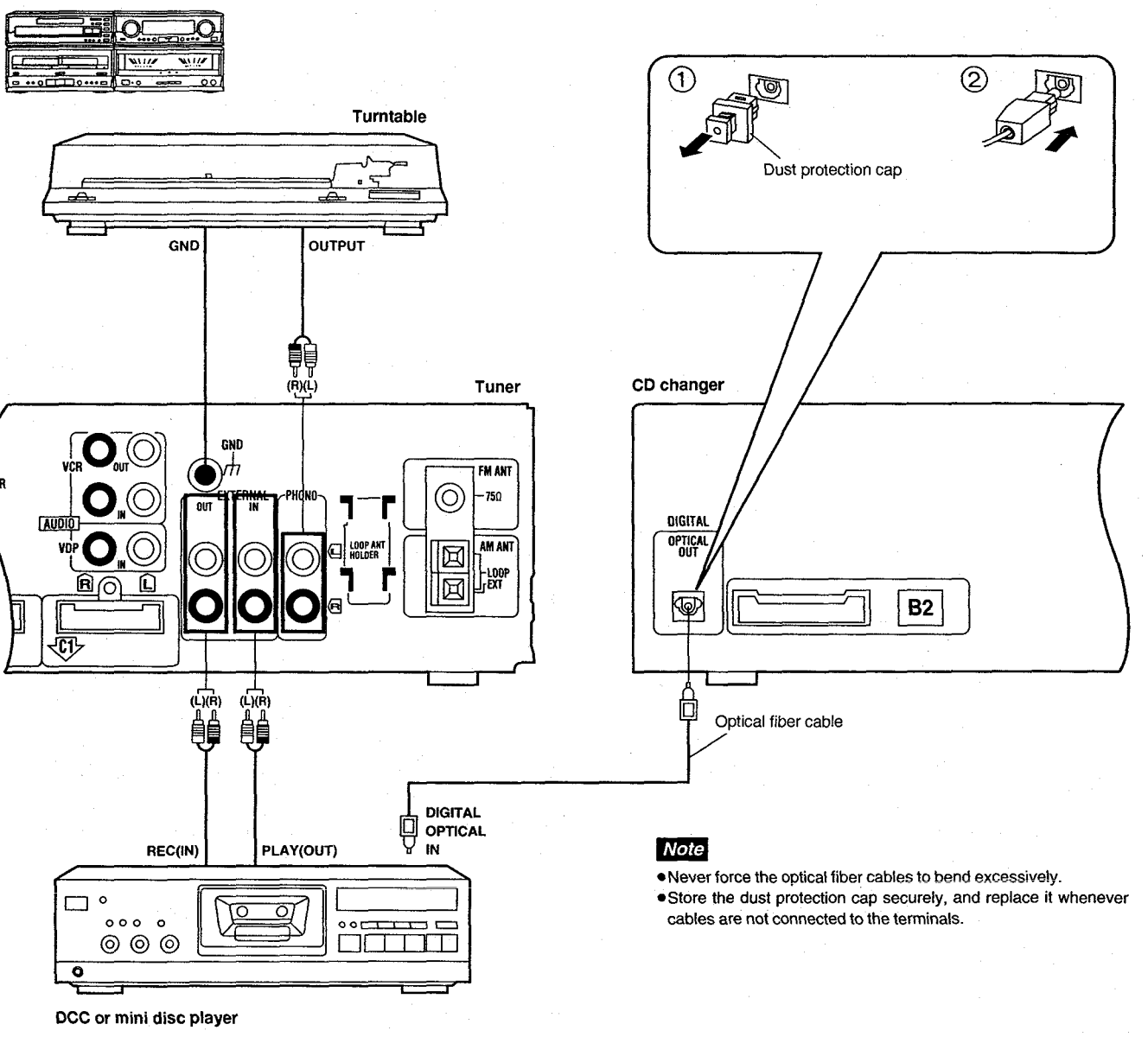


## ● External unit connections

- Make sure that the power supply for all components has been turned off before making any connections.
- For details, refer to the operating instructions of the units which are to be connected.
- All peripheral components and cables sold separately.

**Stereo connection cable** (not included)
White (L)
Red (R)






**Note**

- Never force the optical fiber cables to bend excessively.
- Store the dust protection cap securely, and replace it whenever cables are not connected to the terminals.

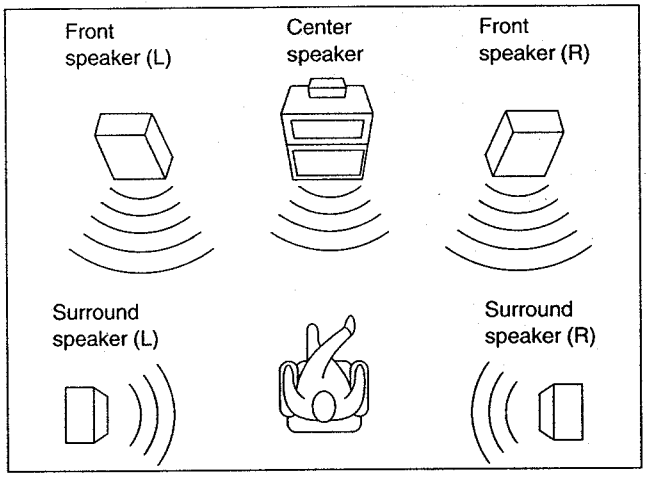
# ■USING THE DOLBY PRO LOGIC SURROUND

By combining front, center and surround speakers, you can enjoy the SURROUND mode which conveys a feeling of presence or the 3 STEREO mode which conveys a feeling of orientation.

## *SURROUND*

By reproducing the feeling of depth and movement of sound, video software or compact discs recorded with Dolby Surround provide the listener with a feeling of presence like that of a movie theater.

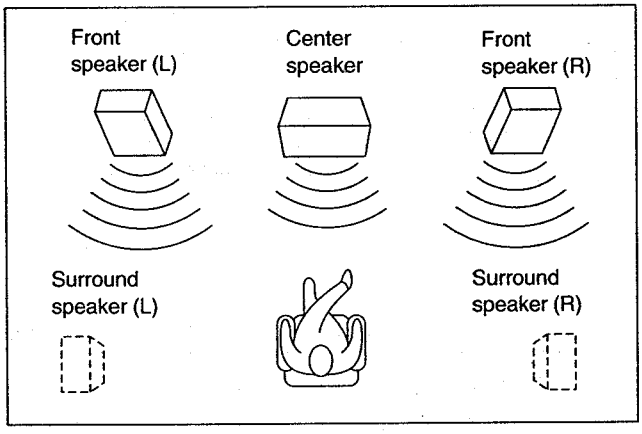
To enjoy SURROUND, be sure to connect the surround speakers.




## *3 STEREO*

You can enjoy audio/video sources with clear sound, more presence and a good feeling of orientation. 3 STEREO can be used with sources not recorded in DOLBY SURROUND.

To enjoy 3 STEREO, be sure to connect the center speaker.




## *Setting the center mode*

For Dolby Pro Logic systems, center mode setting is necessary to play back bass sounds effectively.
Set the center mode in accordance with the size of your center speaker.

***1*** **Switch on the power.**

***2*** **Press MODE to select "SURROUND" or "3 STEREO".**
Each time you press the button, the display will change as follows:
SURROUND→3 STEREO→OFF

***3*** **Press CENTER MODE to select "NORMAL" mode.**
Each time you press the button, the display will change as follows:
NORMAL→WIDE→PHANTOM

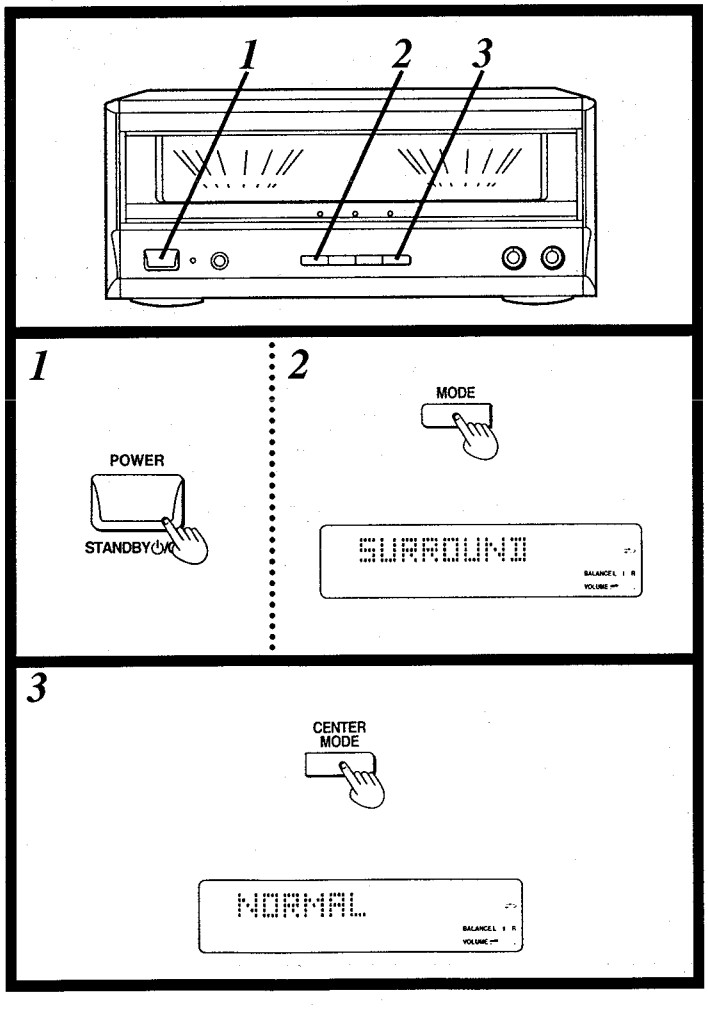
***Note***

"PHANTOM" will not be displayed when you select "3 STEREO" in step 2.

**NORMAL:**
When the center speaker is smaller than the front speakers
**WIDE:**
When the center speaker is the same or larger size as the front speakers
**PHANTOM:** ***SURROUND only***
When no center speaker is connected.

***Note***

In the PHANTOM mode, the sound which would have been sent to the center speaker will be divided equally between both the left and right front speakers.



# ■ADJUSTING SPEAKER OUTPUT LEVEL

In order to reproduce the movement of the sound and its clear orientation, it is important to adjust the output level of each speaker. Adjust output to the correct levels while listening to the test signal. Before starting, check your front speakers are correctly balanced.

**1 Press MODE to select "SURROUND" or "3 STEREO".**

**2 Press TEST to output a test signal.**

The test signal is emitted in the following order:

**For SURROUND mode**

Front speaker (left)→Center speaker
↑ ↓
Surround speakers (left, right)←Front speaker (right)

***Note***

The test signal is not emitted from the center speaker when the center mode is on PHANTOM.

**For 3 STEREO mode**

Front speaker (left)→Center speaker
↑
Front speaker (right)←┘

**3 Turn VOLUME to set the volume level normally used for enjoying the source.**

**4 Press CENTER (−) or (+) or SURROUND (−) or (+) on the remote control to adjust the output level balance.**

Adjust the output level of each speaker from the listening position until they are all identical.

Output levels can be varied within a range of ±12 dB with front speaker output level serving as the zero point.

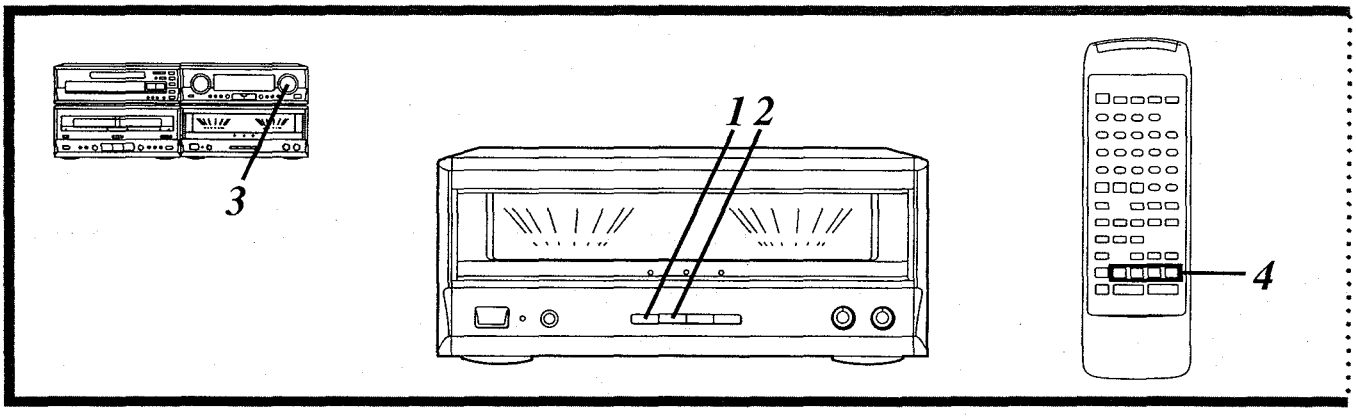
***Note***

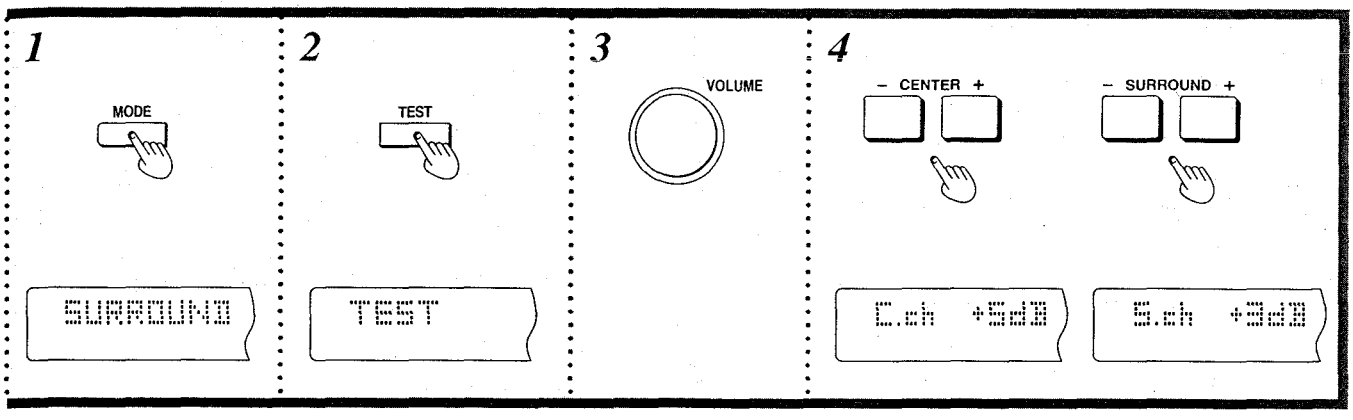
- The test signal is output only by the speaker you are now adjusting and does not repeat the sequence until adjustments are complete.
- Remember you cannot adjust output level of the surround speakers if you selected the 3 STEREO mode in step 1.

---

**To stop the test signal:**

Press TEST.



# ■ADJUSTING THE DELAY TIME

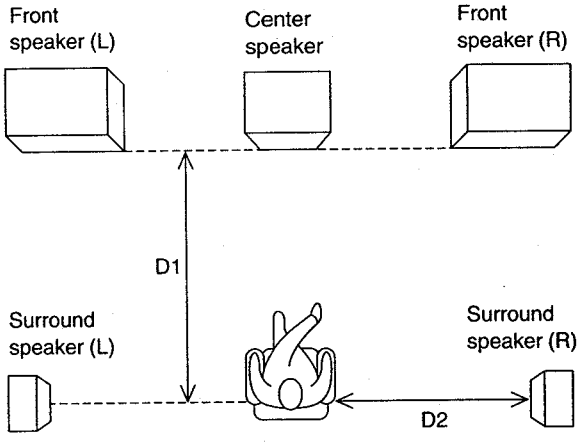
***When enjoying with SURROUND only***

Adjust the sound from the surround speakers until the proper effect is produced.

*1* **Press MODE to select "SURROUND".**

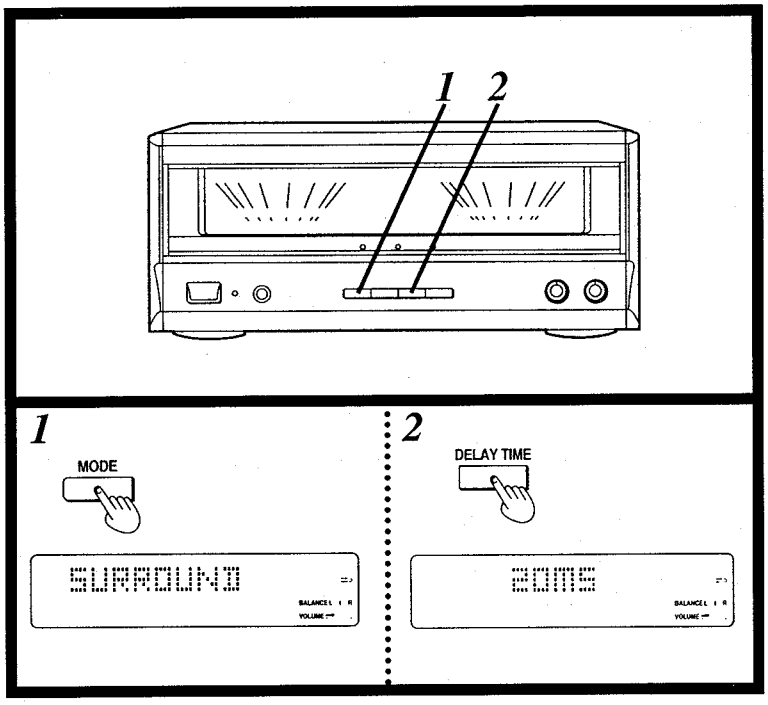
*2* **Press DELAY TIME to set to the suitable time.**
When the button is pressed, the current delay time is displayed, pressing it again changes the delay time.
Each time the button is pressed, the delay time will increase by 5 ms.
15 ms→20 ms→25 ms→30 ms
↑ ↓
To calculate the delay time, refer to the calculation methods.

The standard setting is 20 ms.




D1: Distance from front speakers
D2: Distance from surround speakers

**If D1 is equal to or less than D2:**
Set to 15 ms.
**If D2 is less than D1:**
Start at 15 ms and increase by 5 ms for every 1.5 m of difference between D1 and D2.




# ■ENJOYING WITH SURROUND OR 3 STEREO

Before trying anything, have you set the center mode and adjusted speaker output level and adjusted the delay time?
When viewing a video, turn on the power supply for the TV and set the TV to video mode.

*1* **Press MODE to select "SURROUND" or "3 STEREO".**

*2* **Press INPUT SELECTOR to select the desired external source.**
Each time you press this button, sound sources will be switched as follows.

TUNER→CD→TAPE→EXT
↑ ↓
PHONO←VDP←VCR

These indications correspond to terminals on the tuner's rear panel. Switch the displayed indication to the source you want to use.

***Note***

You can not enjoy SURROUND or 3 STEREO in the tuner mode.

*3* **Start the desired source.**
To operate external sources, see the instruction manual provided with the specific unit.

***Note***

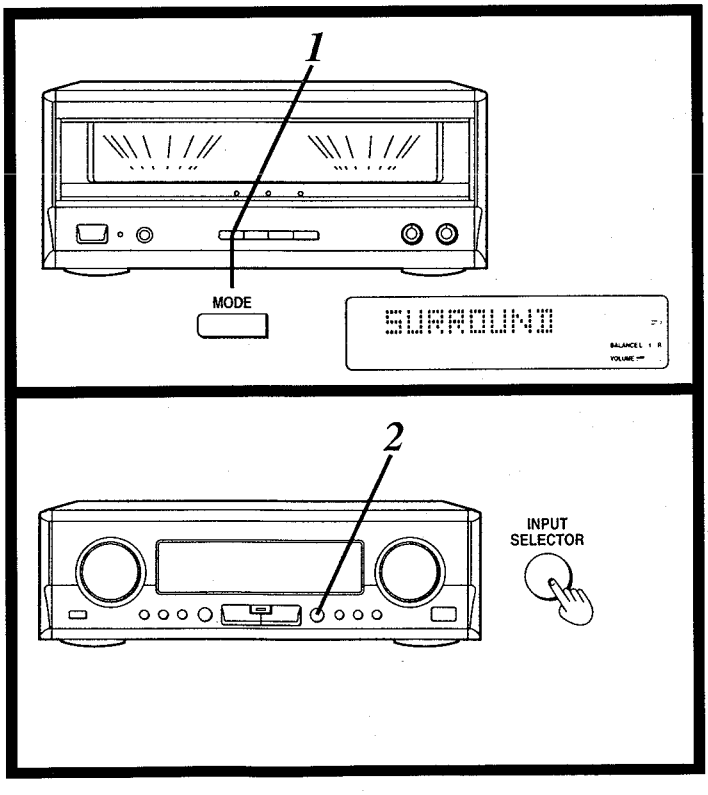
When employing SURROUND, use software recorded in Dolby Surround.

---

**To turn off the DOLBY PRO LOGIC systems:**
Press MODE to select "OFF".

***Note***

You cannot record acoustical effects produced in the SURROUND and 3 STEREO modes.



# ■ Operation Check and Main Component Replacement Procedures

**NOTE**

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.
4. Illustrated screws are equivalent to actual size.
5. Refer the parts No. on the page of "Main Component Replacement Procedures", if necessary.

## • Contents


**•Checking Procedures for each P.C.B.**

Page.

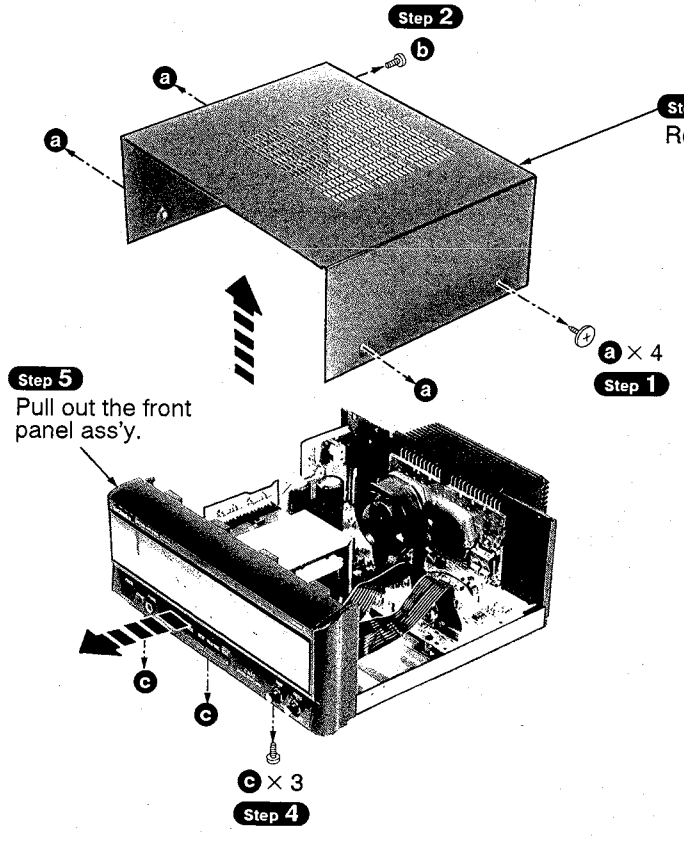
1. Checking for the operation P.C.B.. ..... 13.
2. Checking for the main P.C.B.. ..... 14.

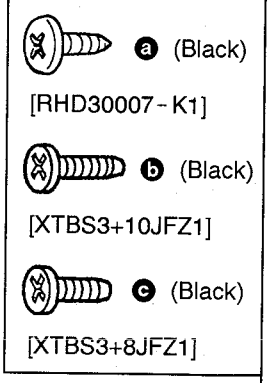
**•Main Component Replacement Procedures**

1. Replacement for the power IC and regulator transistor. ..... 14,15.
2. Replacement for the meter unit. ..... 15.

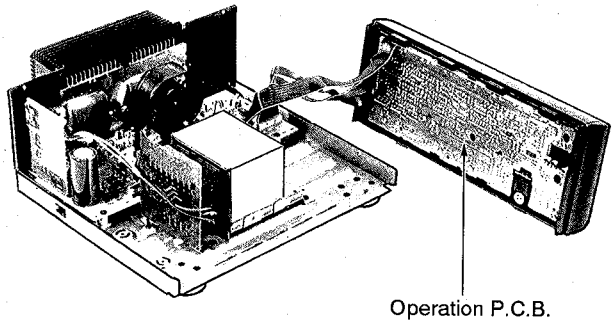

## ■ Checking Procedure for each P.C.B.

### 1. Checking for the operation P.C.B.

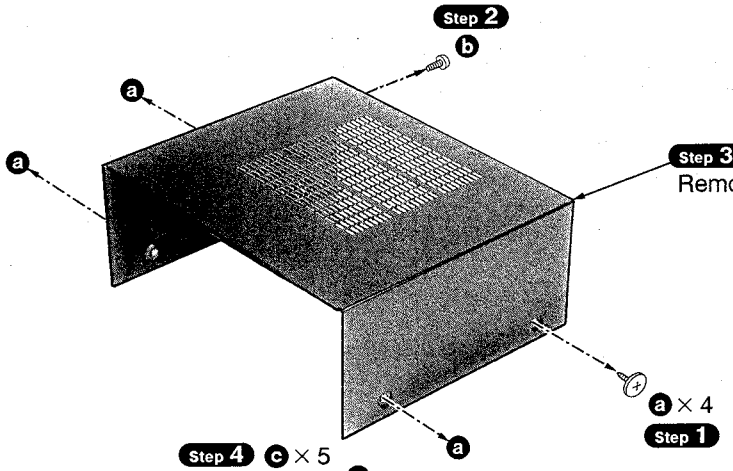


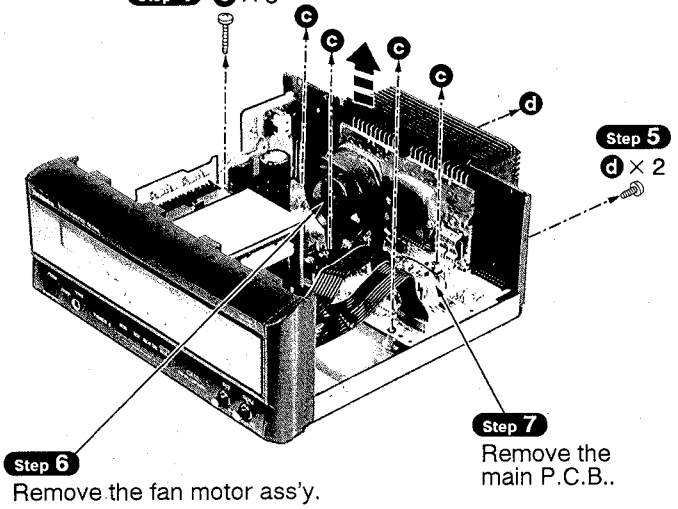




• **Check the operation P.C.B. as shown below.**



## 2. Checking for the main P.C.B.



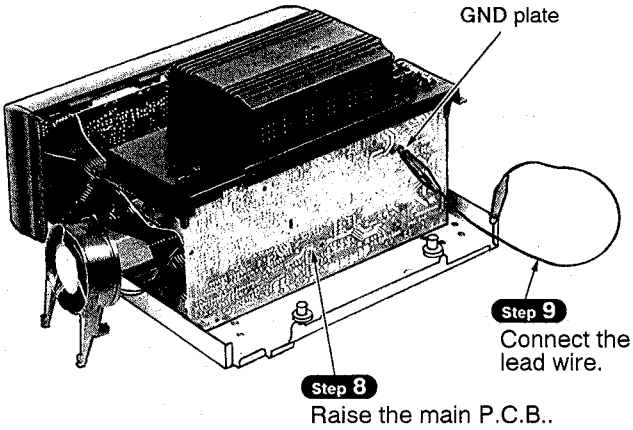

a (Black)
[RHD30007-K1]

b (Black)
[XTBS3+10JFZ1]

c
[XTB3+20JFZ] (Black)

d (Black)
[XTB3+10JFZ]

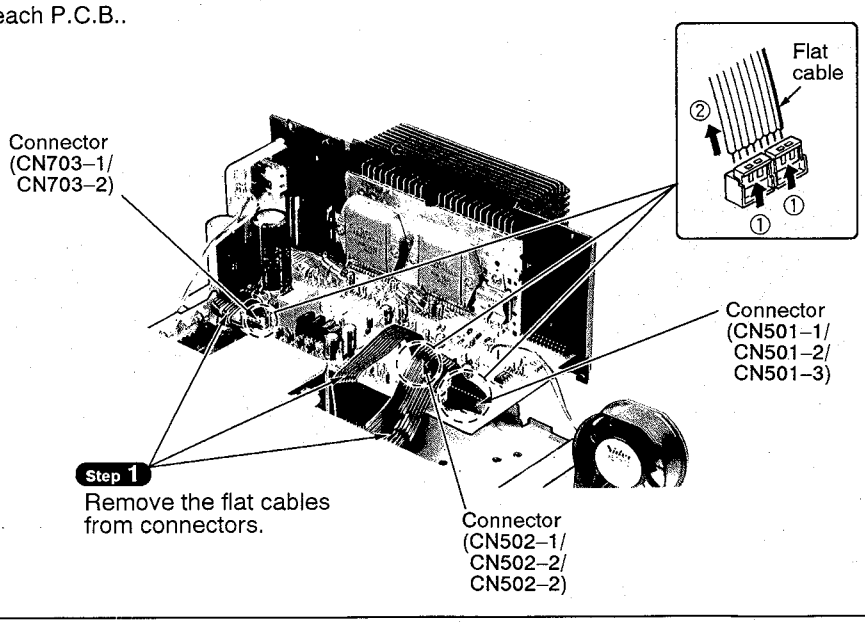
• **Check the main P.C.B. as shown below.**

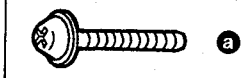


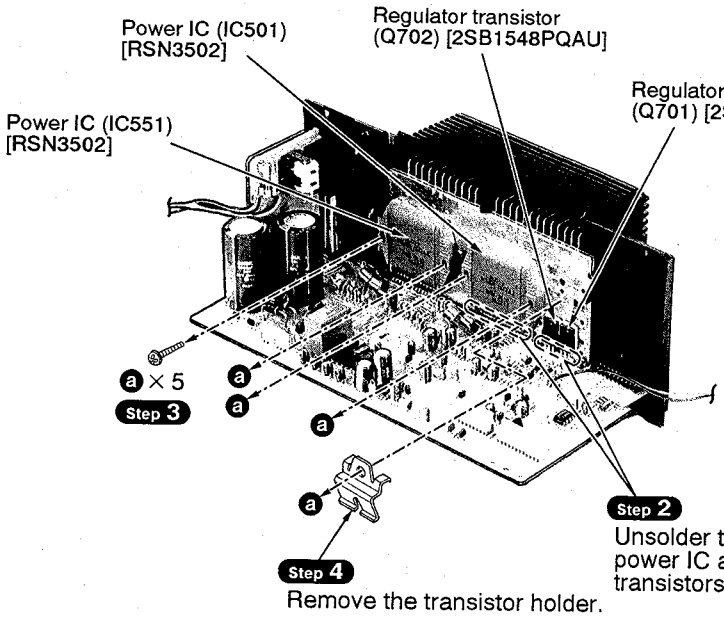

# ■ Main Component Replacement Procedures

## 1. Replacement for the power IC and regulator transistor

• Follow the item 2 ( Step 1 ~ Step 7 ) checking procedures for each P.C.B..





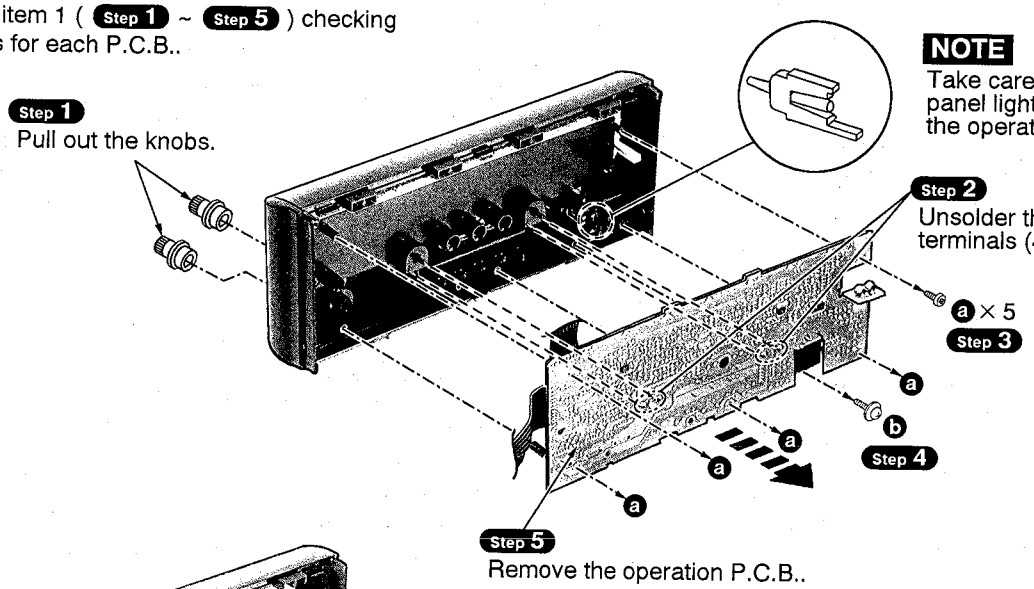



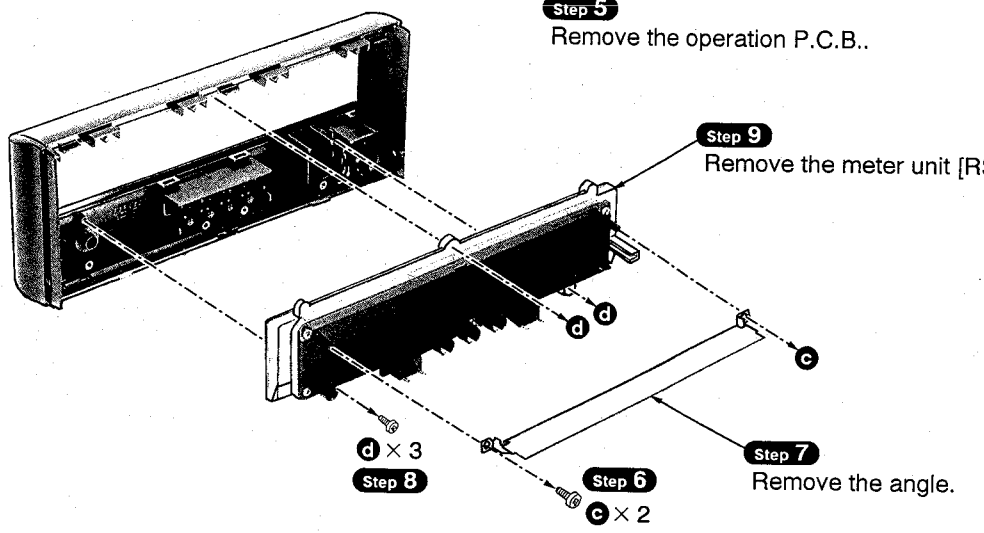

**NOTE**

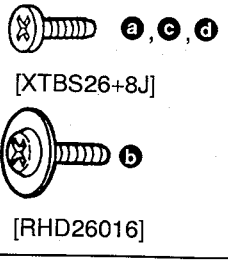
When mounting the power IC or regulator transistor, apply silicone compound (RFKX0002) to the rear side of power IC or regulator transistors.

## 2. Replacement for the meter unit

• Follow the item 1 ( Step 1 ~ Step 5 ) checking procedures for each P.C.B..

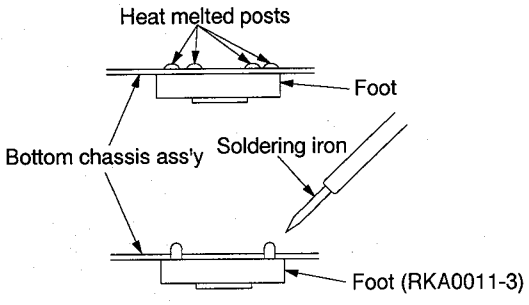


## ■REPLACEMENT OF THE FOOT

1. Remove the 4 heat melted posts on the Bottom chassis ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0011-3) on the bottom chassis ass'y melt the 4 posts with a soldering iron.




## ■POWER SOURCE ON/OFF OF THIS UNIT

**1. Connect this unit to an AC outlet by the AC power cord. (This unit comes to stand-by mode.)**
**2. Short the test point TP701 in Fig. 1. This unit comes to power ON mode.**

**Operation check**

1. Set this unit to power ON mode.
2. Input a signal (1kHz, 100mV), and confirm it to be outputted from the speaker terminal.

| | INPUT | OUTPUT |
|---|---|---|
| Lch | J603–J308 | Lch speaker terminal |
| Rch | J604–J308 | Rch speaker terminal |
| Surround | J611–J308 | Surround speaker terminal (To output a signal, both Lch and Rch should be connected.) |
| Center | J612–J308 | Center speaker terminal |

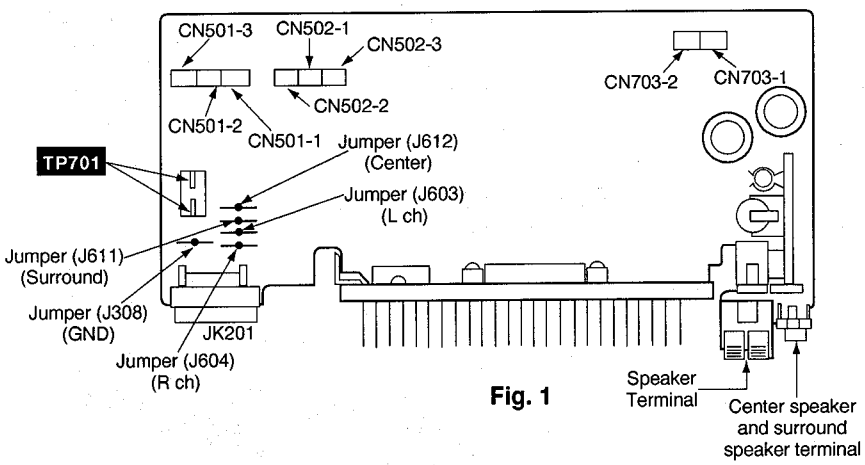



**Fig. 1**

## ■MEASUREMENTS AND ADJUSTMENTS

**Caution:** Before adjustment, be sure to connect this unit through the tuner (ST-CA10).

**Control positions and equipment used.**

- BASS, TREBLE knob ..... Center
- Input selector (ST-CA10)..... AUX
- AF Oscillator
- AC electronic voltmeter (EVM)

**● POWER METER ADJUSTMENT**

1. Connect an AF oscillator and AC EVM to the amplifier, as shown in **Fig. 1**.
2. Set the power meter input level to 0 and confirm the meters on both amplifiers, L ch and R ch, show **–60dB**.
3. Turn on power to the unit and apply a **1kHz 50mV** signal from pin ③ (GND) to pin ④ (R ch) and pin ⑤ (L ch) of W501. With this input level applied, check the AC EVM monitor are within the range of **±3mV**.
4. Adjust **VR808** (R ch) and **VR809** (L ch) so that the power meter indicates **1W**, as shown in **Fig.2**.
5. Increase the input level by **10dB** and confirm that the power meter indicates **10W (±1.5W)**.
6. Set the input level back to **0** and check the meter indicators do not return to **–60dB** too quickly or unevenly.

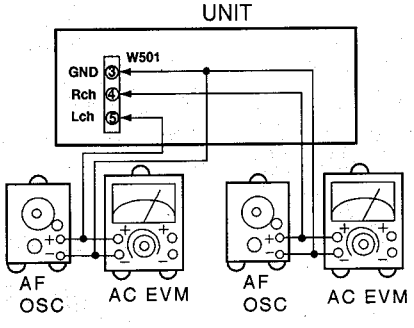



**Fig.1**

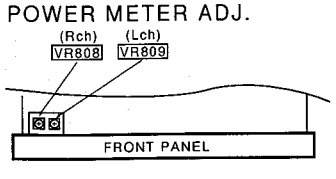



**Fig.2**

# ■SCHEMATIC DIAGRAM

**● This schematic diagram may be modified at any time with the development of new technology.**


| | Page |
|---|---|
| **A OPERATION CIRCUIT** | 18, 19 |
| **B HEADPHONES JACK** | 18 |
| **C MAIN CIRCUIT** | 20, 21 |
| **D POWER TRANSFORMER CIRCUIT [For (E, EB, EG, GN) areas]** | 21 |
| **[For (GC) area]** | 17 |
| **E AC IN TERMINAL CIRCUIT [For (E, EB, EG, GN) areas]** | 17 |
| **F VOLTAGE SELECTOR CIRCUIT [For (GC) area]** | 17 |


**Notes:**

- **S701**: Voltage adj. switch in "220V" position. (110V ↔ 127V ↔ 220V ↔ 240V) [For (GC) area only]
- **S801**: Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)
- **S802**: DOLBY PRO LOGIC mode select switch (MODE)
- **S803**: Test signal switch (TEST)
- **S804**: Delay time adjust switch (DELAY TIME)
- **S805**: Center mode select switch (CENTER MODE)
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
  No mark: Power ON
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-nose (resistors), etc. are used.
  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

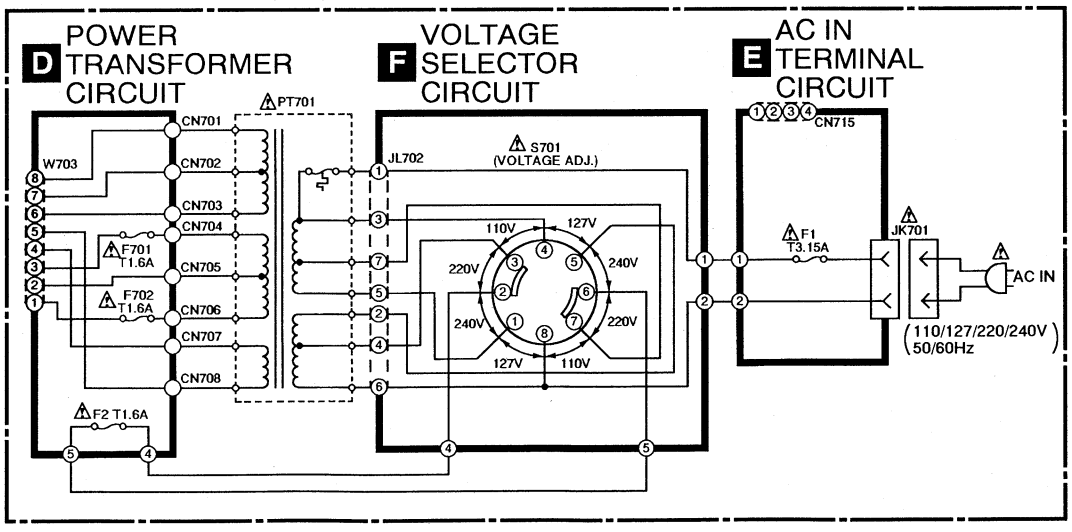
- **Caution!**

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
Cover the parts boxes made of plastics with aluminum foil.
Ground the soldering iron.
Put a conductive mat on the work table.
Do not touch the legs of IC or LSI with the fingers directly.

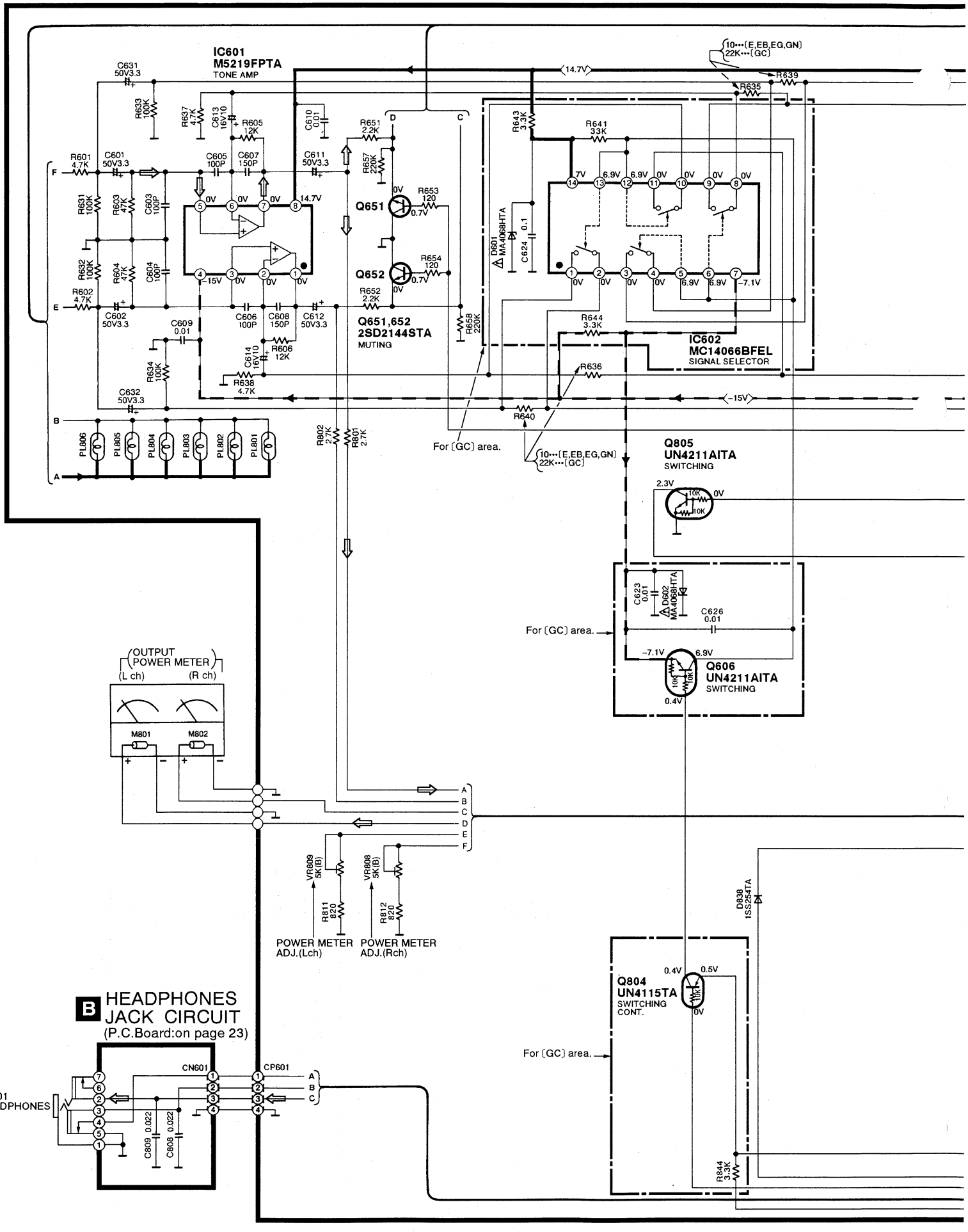
- **Voltage and signal line**

: Positive voltage line  : Negative voltage line
: Source signal line (L-ch)
: Surround speaker drive signal line
: Center speaker drive signal line

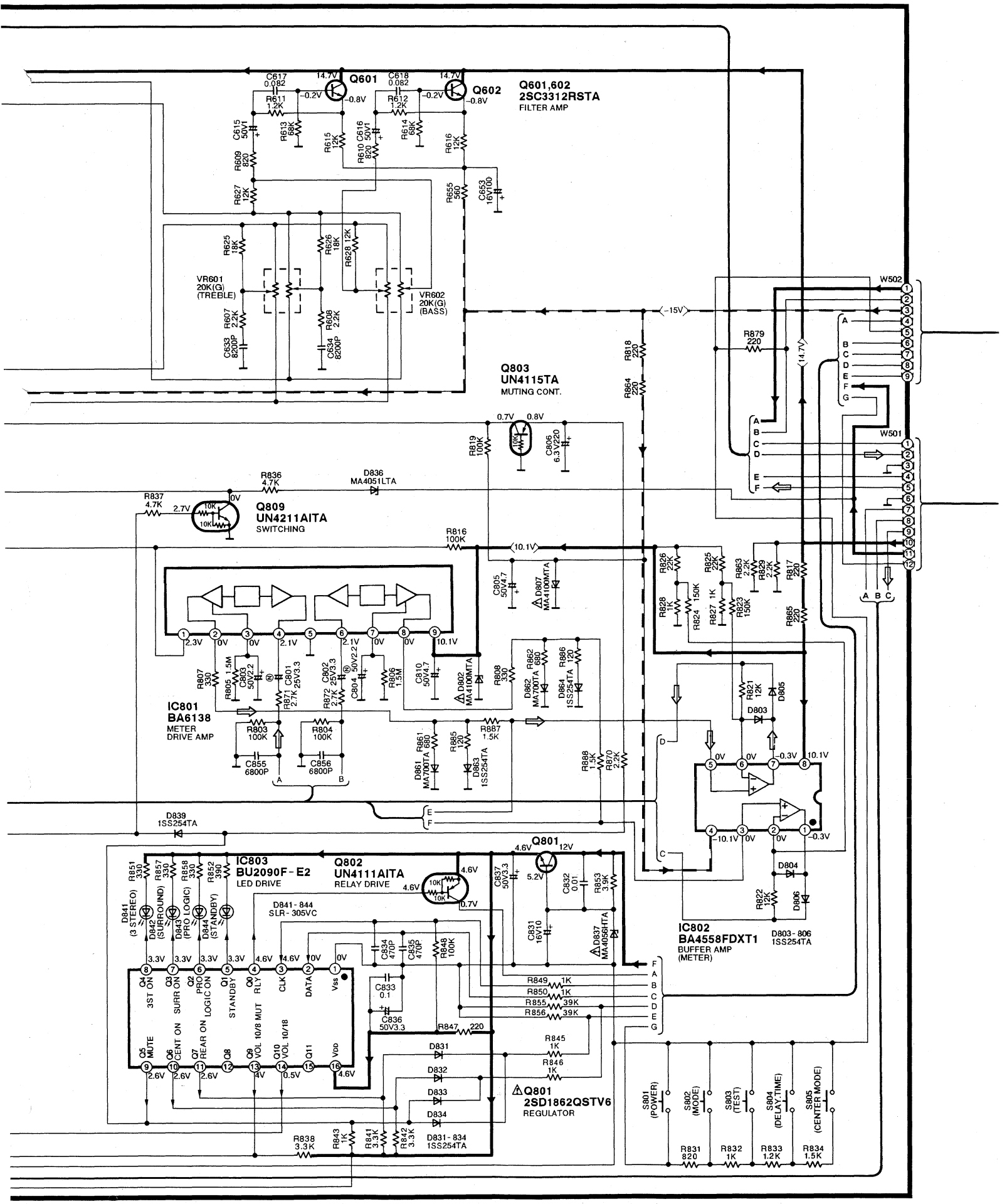
Power Source For [GC] area. (P.C.Board:on page 24)



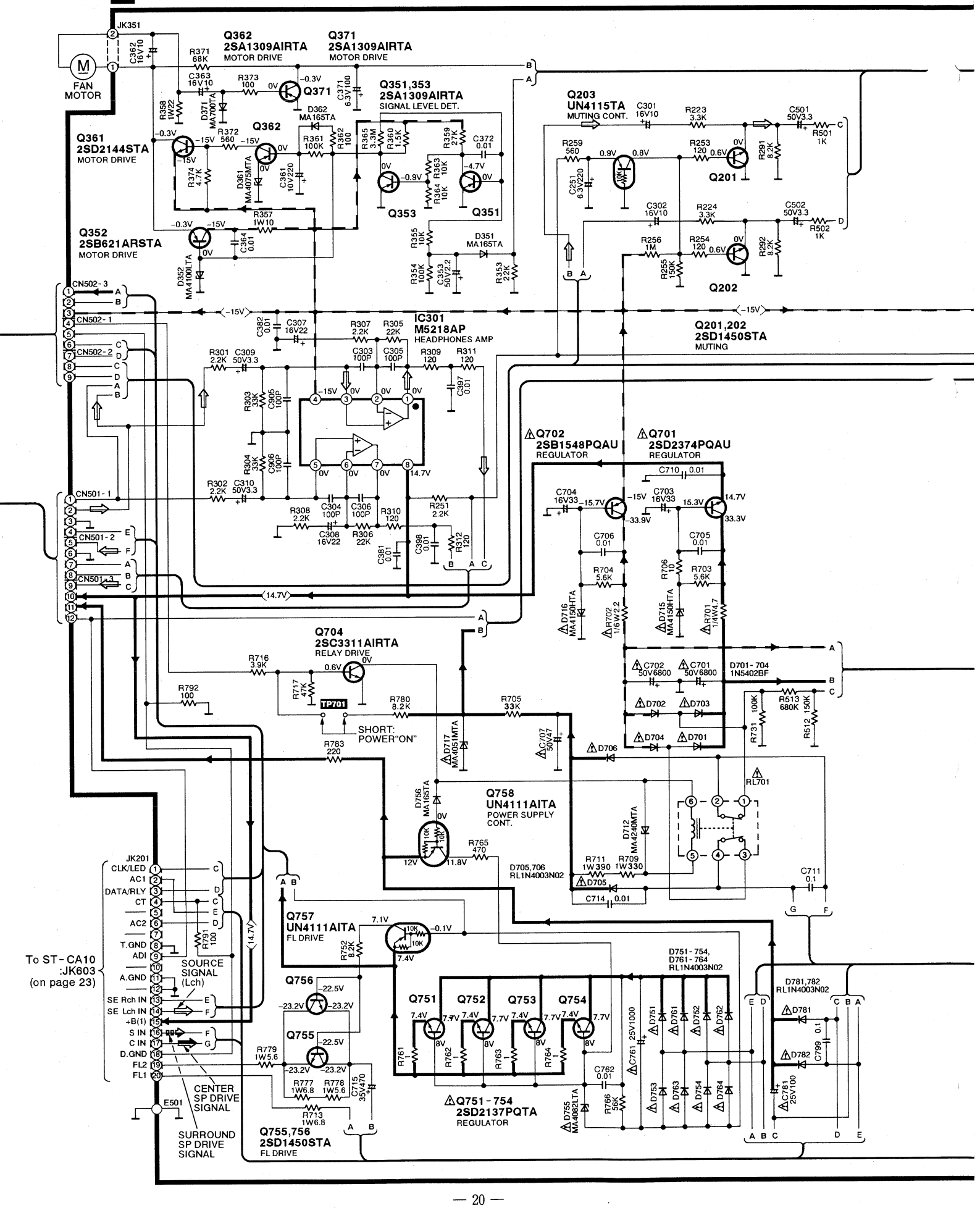
## A OPERATION CIRCUIT (P.C.Board:on page 23)

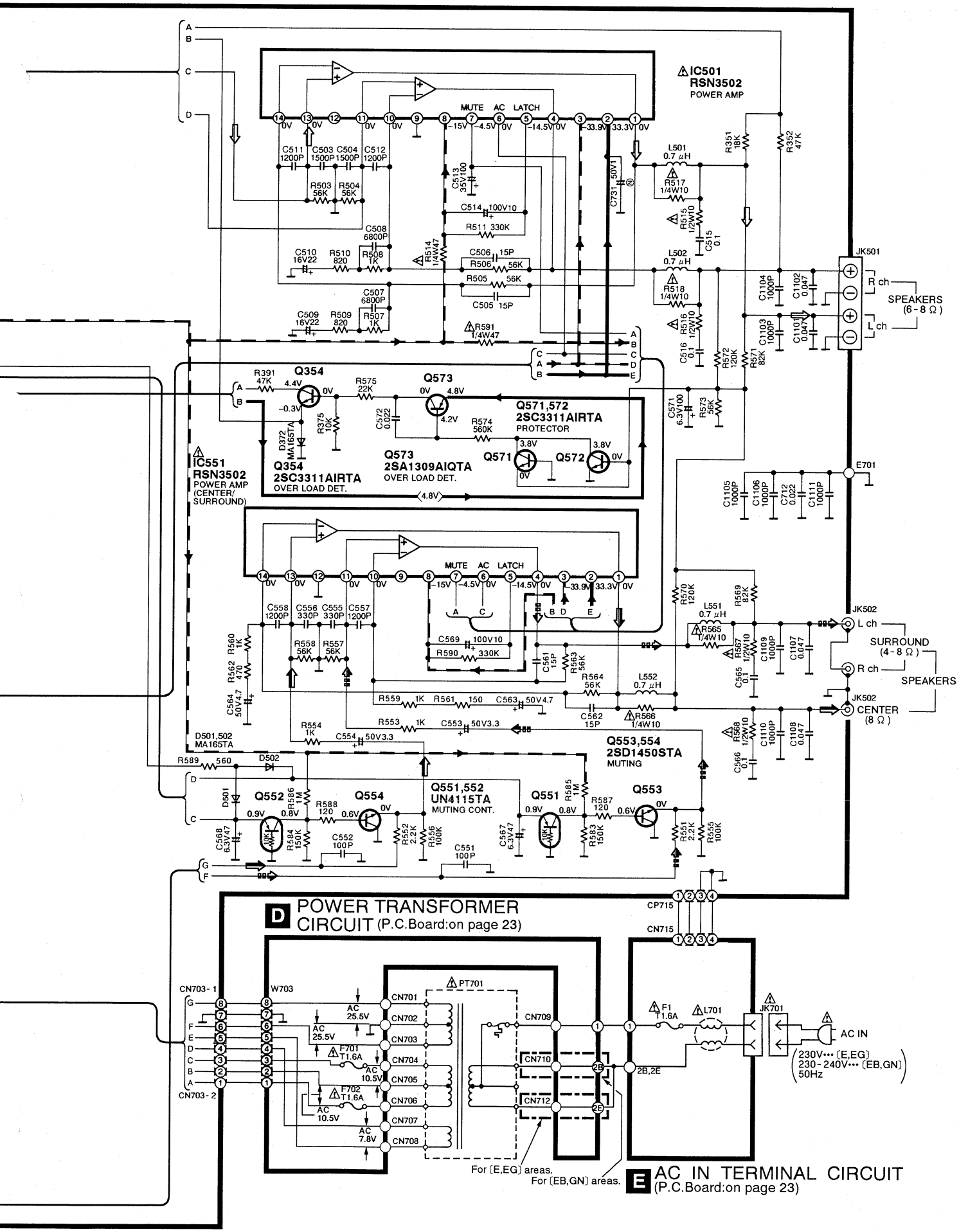



## B HEADPHONES JACK CIRCUIT (P.C.Board:on page 23)


Q601,602
2SC3312RSTA
FILTER AMP
Q601
Q602
VR601
20K(G)
(TREBLE)
VR602
20K(G)
(BASS)
Q803
UN4115TA
MUTING CONT.
Q809
UN4211AITA
SWITCHING
IC801
BA6138
METER
DRIVE AMP
IC803
BU2090F-E2
LED DRIVE
Q802
UN4111AITA
RELAY DRIVE
D841-844
SLR-305VC
Q801
2SD1862QSTV6
REGULATOR
IC802
BA4558FDXT1
BUFFER AMP
(METER)
D803-806
1SS254TA
D836
MA4051LTA
D839
1SS254TA
D831-834
1SS254TA
W502
W501
-15V
14.7V
10.1V
S801
(POWER)
S802
(MODE)
S803
(TEST)
S804
(DELAY TIME)
S805
(CENTER MODE)

## C MAIN CIRCUIT (P.C.Board:on page 22)

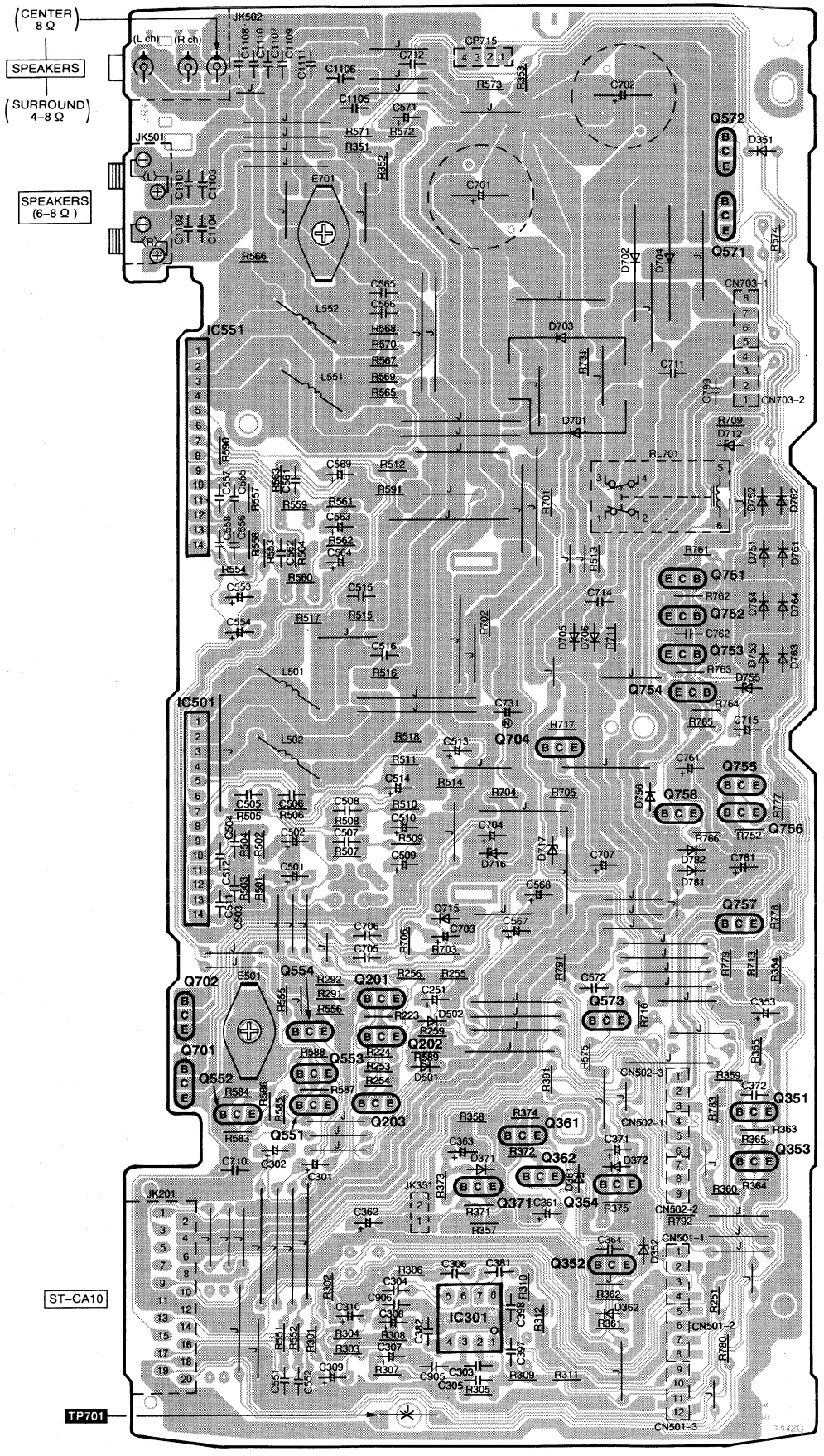



⚠IC501
RSN3502
POWER AMP
MUTE AC LATCH
L501 0.7 μH
L502 0.7 μH
JK501
R ch
L ch
SPEAKERS
(6-8 Ω)
Q354
2SC3311AIRTA
OVER LOAD DET.
Q573
2SA1309AIQTA
OVER LOAD DET.
Q571,572
2SC3311AIRTA
PROTECTOR
Q571
Q572
⚠IC551
RSN3502
POWER AMP
(CENTER/
SURROUND)
E701
JK502
L ch
SURROUND
(4-8 Ω)
R ch
SPEAKERS
JK502
CENTER
(8 Ω)
L551 0.7 μH
L552 0.7 μH
D501,502
MA165TA
Q553,554
2SD1450STA
MUTING
Q552
Q554
Q551,552
UN4115TA
MUTING CONT.
Q551
Q553
D POWER TRANSFORMER
CIRCUIT (P.C.Board:on page 23)
CP715
CN715
CN703-1
CN703-2
W703
⚠PT701
CN701
CN702
CN703
CN704
CN705
CN706
CN707
CN708
CN709
CN710
CN712
⚠F701 T1.6A
⚠F702 T1.6A
⚠F1 T1.6A
⚠L701
⚠JK701
AC IN
(230V··· (E,EG)
230-240V··· (EB,GN)
50Hz)
For (E,EG) areas.
For (EB,GN) areas.
E AC IN TERMINAL CIRCUIT
(P.C.Board:on page 23)

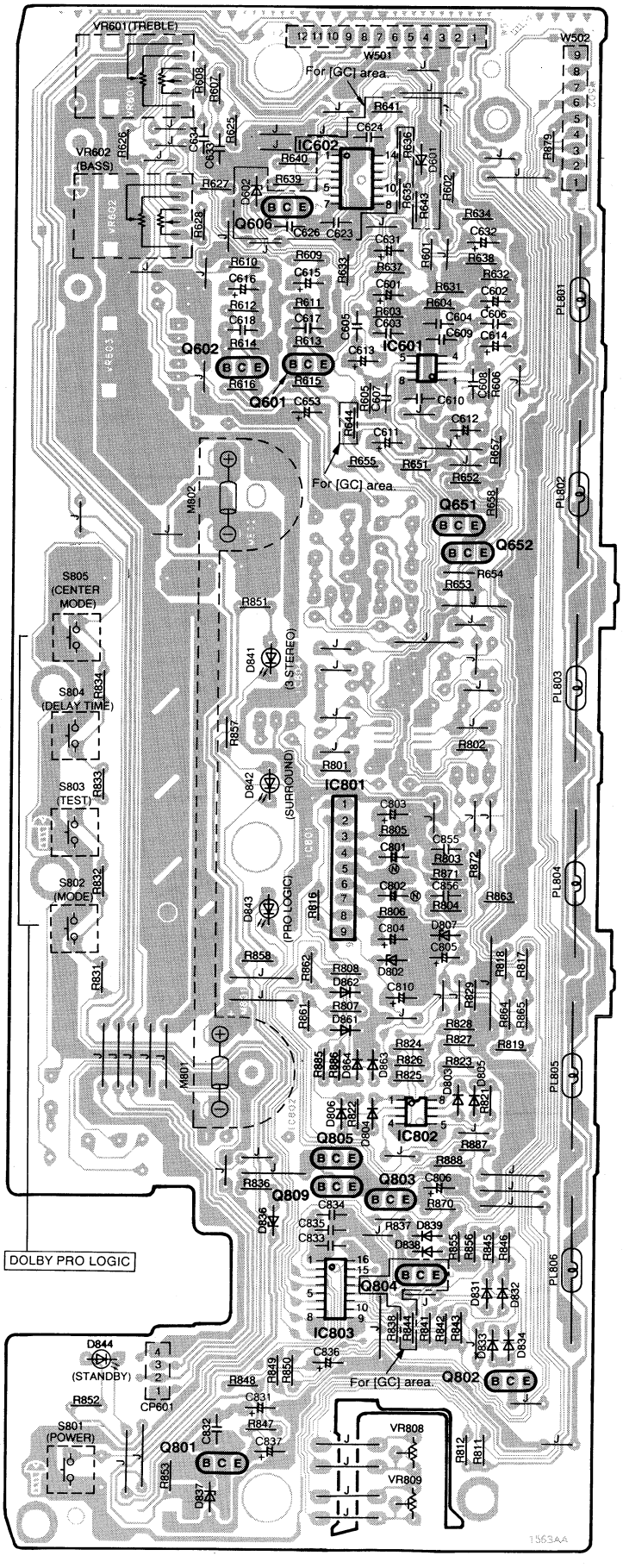
# ■PRINTED CIRCUIT BOARD DIAGRAM

● This printed circuit board diagram may be modified at any time with the development of new technology.

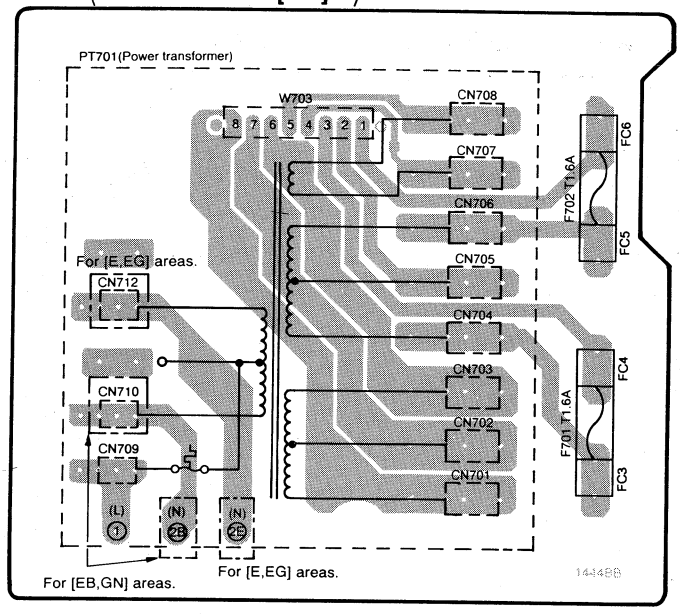
## C MAIN P.C.B. (REP2224C–M)



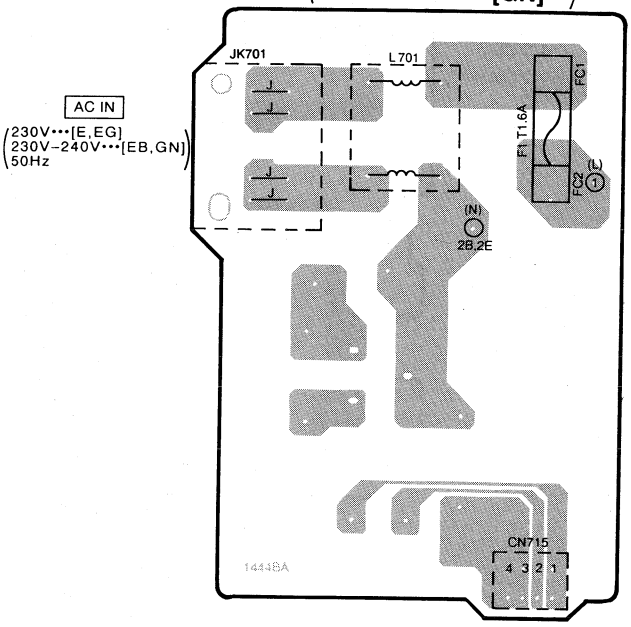
## A OPERATION P.C.B. (REP2223B–S•••[E,EG,EB,GN] REP2223C–S•••[GC])



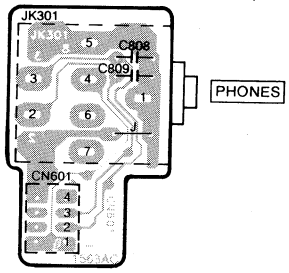

## D POWER TRANSFORMER P.C.B. (REP2298A–P•••[E,EG] REP2298B–P•••[EB] REP2298E–P•••[GN])



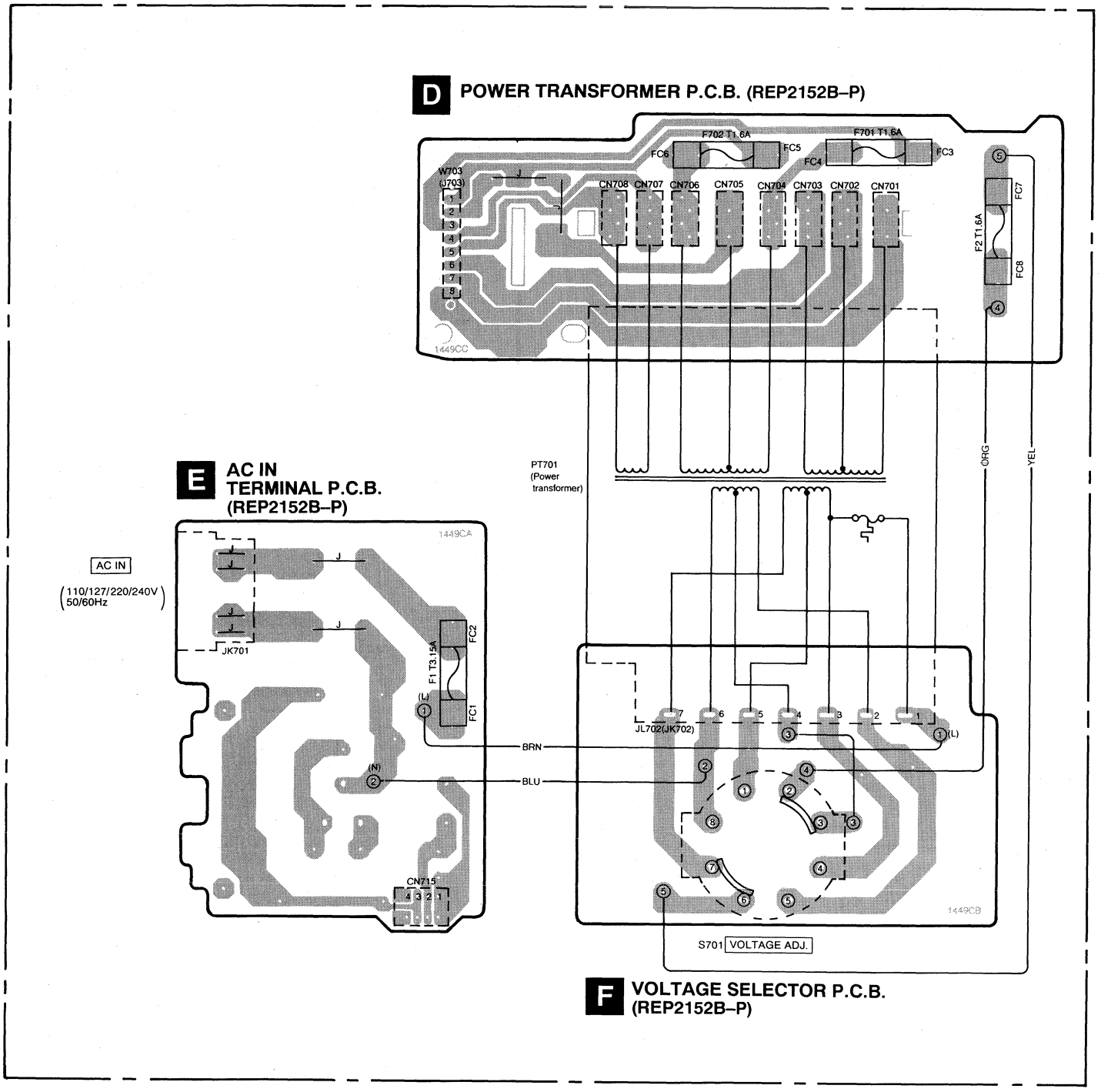

## E AC IN TERMINAL P.C.B. (REP2298A–P•••[E,EG] REP2298B–P•••[EB] REP2298E–P•••[GN])




## B HEADPHONES JACK P.C.B. (REP2223B–S•••[E,EG,EB,GN] REP2223C–S•••[GC])

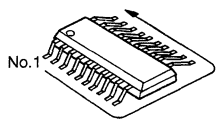


Power Source P.C.B. For [GC] area.

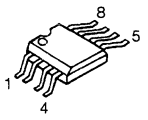


## • Terminal guide of IC's, transistors and diodes

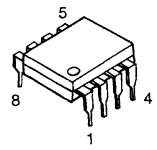
| | |
|---|---|
| M5219FPTA | 8PIN |
| MC14066BFEL | 14PIN |
| BU2090F-E2 | 16PIN |



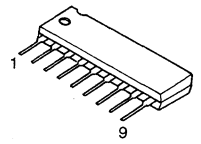

BA4558FDXT1



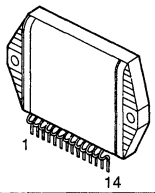

M5218AP

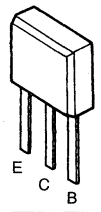



BA6138



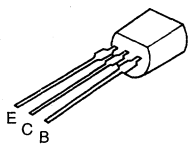

RSN3502



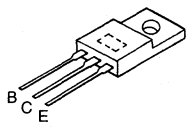




2SA1309AIQTA
2SA1309AIRTA
2SC3311AIRTA
2SC3312RSTA
2SD1450STA
UN4111AITA
UN4115TA
UN4211AITA

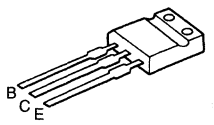
2SB621ARSTA



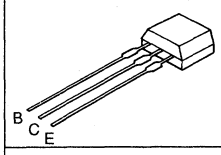

2SB1548PQAU
2SD2374PQAU



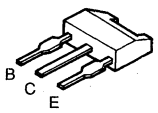

2SD2137PQTA

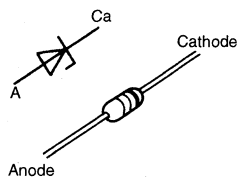



2SD2144STA

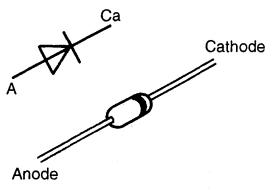



2SD1862QSTV6

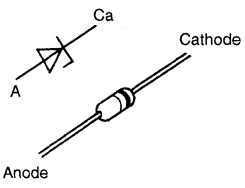



MA4051LTA
MA4051MTA
MA4056HTA
MA4068HTA
MA4075MTA
MA4082LTA

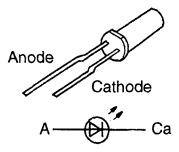



1SS254TA
MA165TA
MA700TA

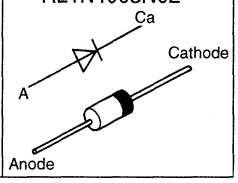



MA4100MTA
MA4100LTA
MA4150HTA
MA4240MTA

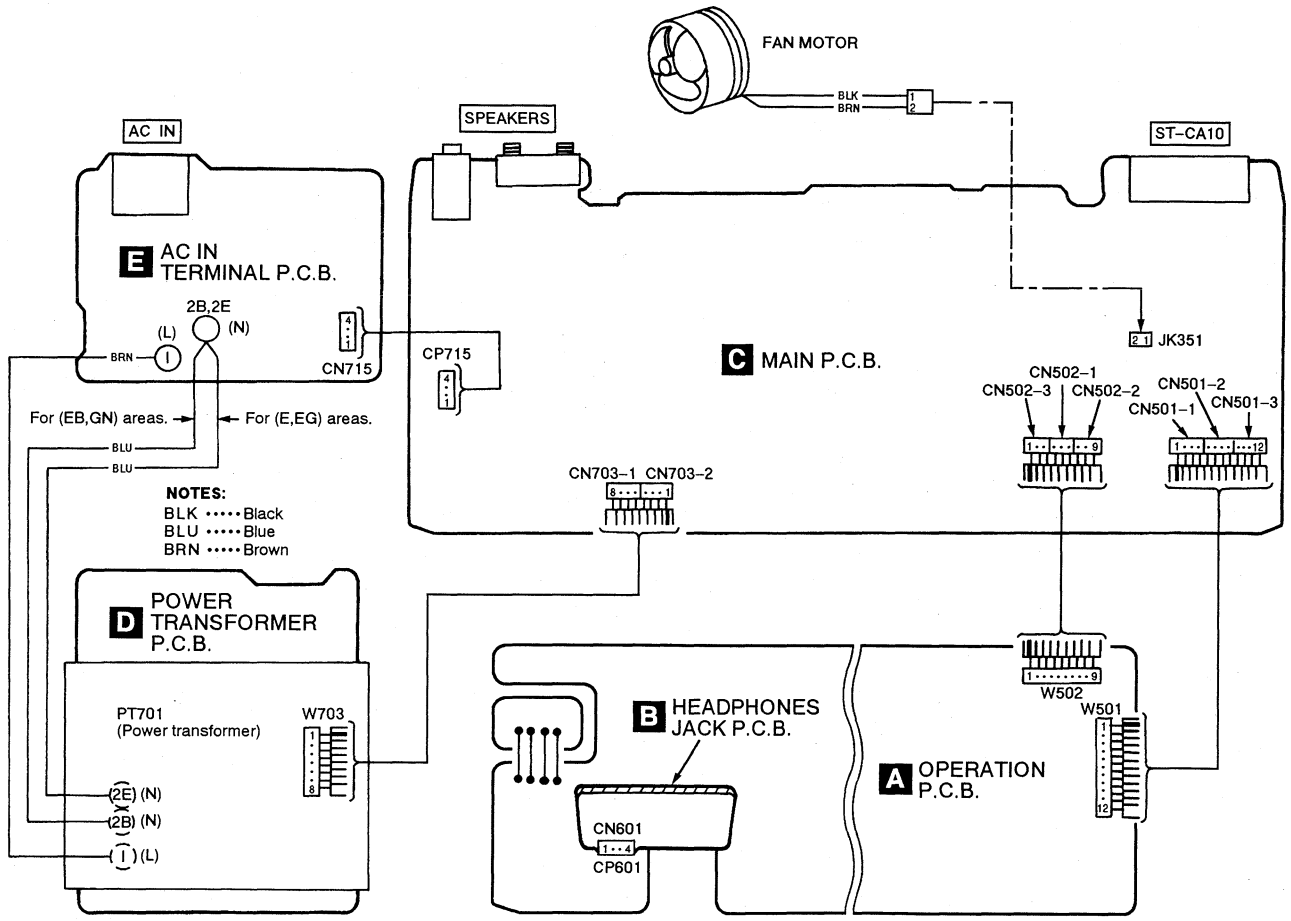
SLR-305VC



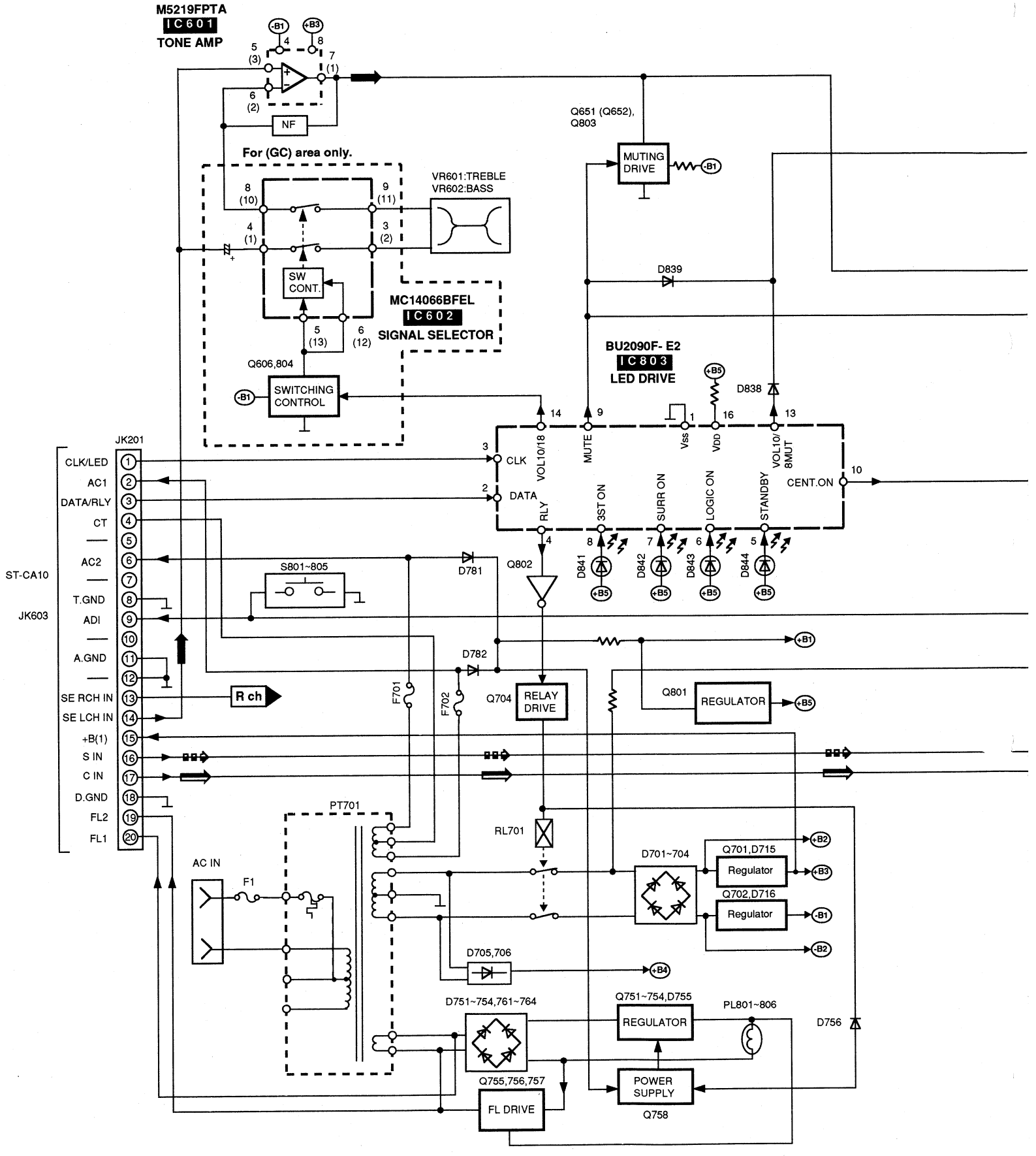

1N5402BF
RL1N4003N02

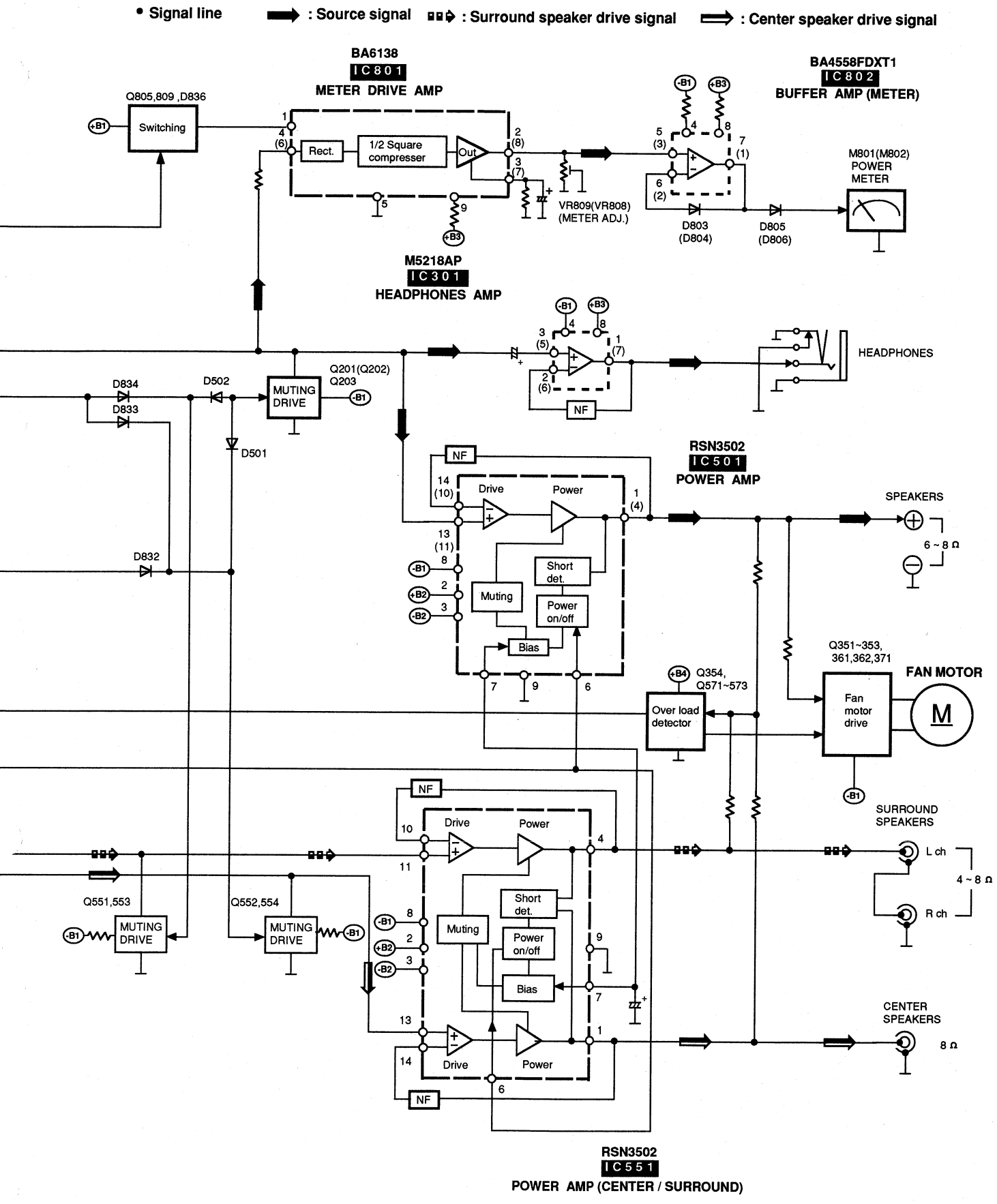



## ■ WIRING CONNECTION DIAGRAM

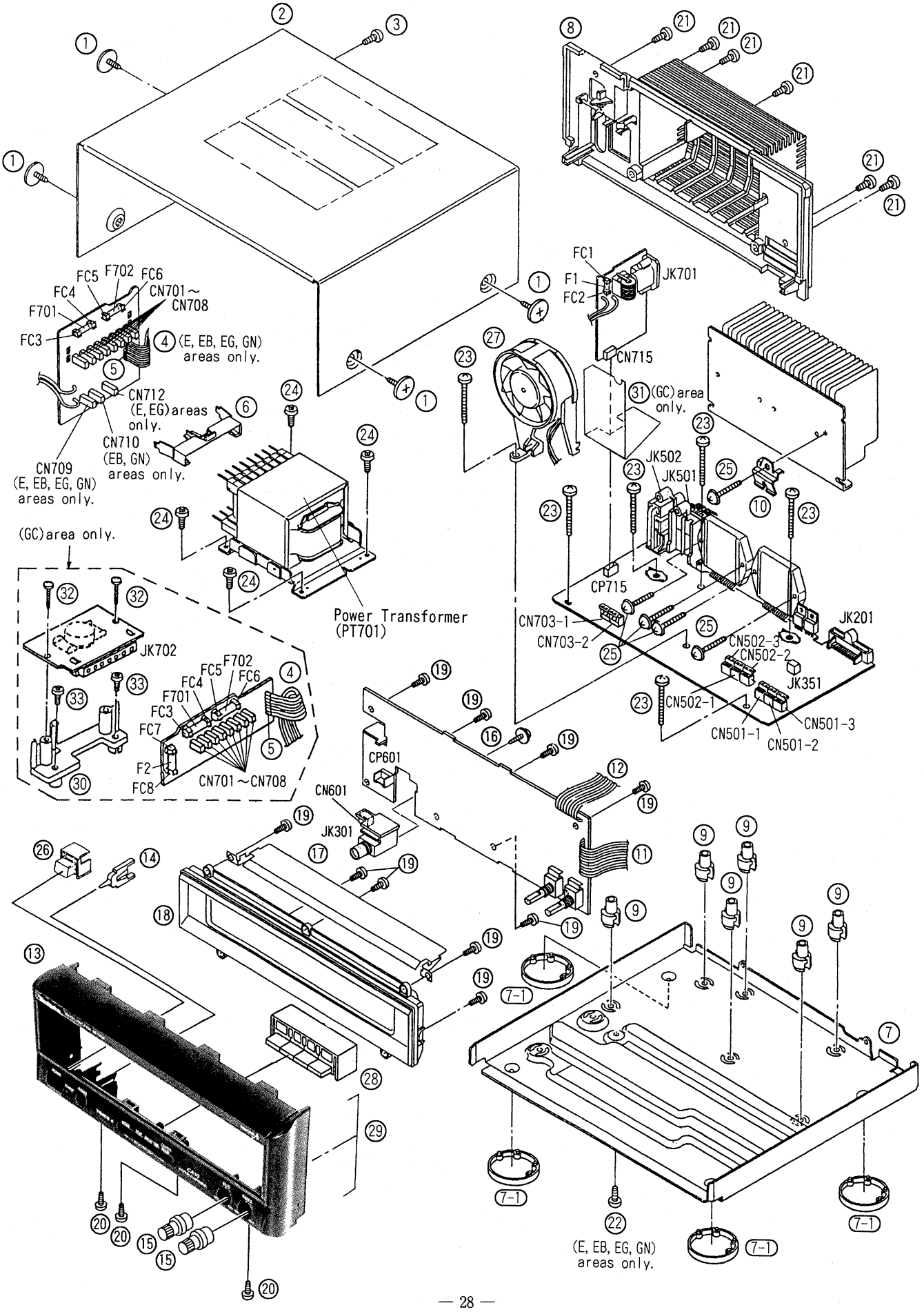


# ■BLOCK DIAGRAM




• Signal line
: Source signal
: Surround speaker drive signal
: Center speaker drive signal
BA6138
IC801
METER DRIVE AMP
BA4558FDXT1
IC802
BUFFER AMP (METER)
Q805,809 ,D836
Switching
Rect.
1/2 Square compresser
Out
VR809(VR808)
(METER ADJ.)
M801(M802)
POWER
METER
D803
(D804)
D805
(D806)
M5218AP
IC301
HEADPHONES AMP
HEADPHONES
NF
D834
D833
D502
D501
MUTING DRIVE
Q201(Q202)
Q203
RSN3502
IC501
POWER AMP
Drive
Power
Short det.
Muting
Power on/off
Bias
SPEAKERS
6 ~ 8 Ω
D832
Q354,
Q571~573
Over load detector
Q351~353,
361,362,371
FAN MOTOR
Fan motor drive
M
SURROUND
SPEAKERS
L ch
R ch
4 ~ 8 Ω
Q551,553
Q552,554
CENTER
SPEAKERS
8 Ω
RSN3502
IC551
POWER AMP (CENTER / SURROUND)

# ■CABINET PARTS LOCATION



# ■ REPLACEMENT PARTS LIST

**Notes:** * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| | | CABINET AND CHASSIS | |
| | | | |
| 1 | RHD30007-K1 | SCREW | |
| 2 | RKM0202A-K | CABINET | |
| 3 | XTBS3+10JFZ1 | SCREW | |
| 4 | RWJ1808130XX | FLAT CABLE(8P) (W703) | (E, EB, EG, GN) |
| 4 | RWJ1808100XX | FLAT CABLE(8P) (W703) | (GC) |
| 5 | RJS1A5508 | CABLE HOLDER | |
| 6 | RMN0191 | P. C. B. HOLDER | |
| 7 | RFKJECA7-N | BOTTOM CHASSIS ASS'Y | (E, EB, EG, GN) |
| 7 | RFKJECH730GC | BOTTOM CHASSIS ASS'Y | (GC) |
| 7-1 | RKA0011-3 | FOOT | |
| 8 | RFKHECA10E-K | REAR GRILLE ASS'Y | (E, EG) |
| 8 | RFKHECA10EBK | REAR GRILLE ASS'Y | (EB, GN) |
| 8 | RFKHECA10GCK | REAR GRILLE ASS'Y | (GC) |
| 9 | SHE187-5 | P. C. B SUPPORT | |
| 10 | RMC0158 | TRANSISTOR HOLDER | |
| 11 | RWJ1812220QC | FLAT CABLE(12P) (W501) | |
| 12 | RWJ1809220QC | FLAT CABLE(9P) (W502) | |
| 13 | RFKGECA10E-K | FRONT PANEL ASS'Y | |
| 14 | RGL0320-Q | PANEL LIGHT | |
| 15 | RGW0205-S | TONE CONTROL KNOB | |
| 16 | RHD26016 | SCREW | |
| 17 | RMV0107 | REFLECTION PLATE | |
| 18 | RSE0007A | METER UNIT | |
| 19 | XTBS26+8J | SCREW | |
| 20 | XTBS3+8JFZ1 | SCREW | |
| 21 | XTB3+10JFZ | SCREW | |
| 22 | XTB3+12JFZ | SCREW | (E, EB, EG, GN) |
| 23 | XTB3+20JFZ | SCREW | |
| 24 | XTB3+8JFZ | SCREW | |
| 25 | XTW3+15T | SCREW | |
| 26 | RGU1357-1S | POWER BUTTON | |
| 27 | REM0057 | FAN MOTOR ASS'Y | |
| 28 | RGU1358-K | SUB BUTTON | |
| 29 | RME0208 | EARTH WIRE | |
| 30 | RMN0190-1 | P. C. B. HOLDER | (GC) |
| 31 | RMV0119 | BARRIER | (GC) |
| 32 | XTB3+12JFZ | SCREW | (GC) |
| 33 | XTB3+8JFZ | SCREW | (GC) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| | | INTEGRATED CIRCUIT(S) | |
| | | | |
| IC301 | M5218AP | HEADPHONES AMP | |
| IC501 | RSN3502 | POWER AMP(MAIN) | ⚠ |
| IC551 | RSN3502 | POWER AMP(SURROUND/CENTER) | ⚠ |
| IC601 | M5219FPTA | TONE AMP | |
| IC602 | MC14066BFEL | SIGNAL SELECTOR | (GC) |
| IC801 | BA6138 | METER DRIVE AMP | |
| IC802 | BA4558FDXT1 | BUFFER AMP | |
| IC803 | BU2090F-E2 | LED DRIVE | |
| | | | |
| | | TRANSISTOR(S) | |
| | | | |
| Q201, 202 | 2SD1450RTA | TRANSISTOR | |
| Q203 | UN4115 | TRANSISTOR | |
| Q351 | 2SA1309AIRTA | TRANSISTOR | |
| Q352 | 2SB621A-R | TRANSISTOR | |
| Q353 | 2SA1309AIRTA | TRANSISTOR | |
| Q354 | 2SC3311AIRTA | TRANSISTOR | |
| Q361 | 2SD2144S | TRANSISTOR | |
| Q362 | 2SA1309AIRTA | TRANSISTOR | |
| Q371 | 2SA1309AIRTA | TRANSISTOR | |
| Q551, 552 | UN4115 | TRANSISTOR | |
| Q553, 554 | 2SD1450RTA | TRANSISTOR | |
| Q571, 572 | 2SC3311AIRTA | TRANSISTOR | |
| Q573 | 2SA1309AIQTA | TRANSISTOR | |
| Q601, 602 | 2SC3312RSTA | TRANSISTOR | |
| Q606 | UN4211 | TRANSISTOR | (GC) |
| Q651, 652 | 2SD2144S | TRANSISTOR | |
| Q701 | 2SD2374PQAU | TRANSISTOR | ⚠ |
| Q702 | 2SB1548PQAU | TRANSISTOR | ⚠ |
| Q704 | 2SC3311AIRTA | TRANSISTOR | |
| Q751-754 | 2SD2137PQTA | TRANSISTOR | ⚠ |
| Q755, 756 | 2SD1450RTA | TRANSISTOR | |
| Q757, 758 | UN4111 | TRANSISTOR | |
| Q801 | 2SD1862QSTV6 | TRANSISTOR | ⚠ |
| Q802 | UN4111 | TRANSISTOR | |
| Q803 | UN4115 | TRANSISTOR | |
| Q804 | UN4115TA | TRANSISTOR | (GC) |
| Q805 | UN4211 | TRANSISTOR | |
| Q809 | UN4211 | TRANSISTOR | |
| | | | |
| | | DIODE(S) | |
| | | | |
| D351 | MA165 | DIODE | |
| D352 | MA4100LTA | DIODE | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D361 | MA4075MTA | DIODE | |
| D362 | MA165 | DIODE | |
| D371 | MA700TA | DIODE | |
| D372 | MA165 | DIODE | |
| D501, 502 | MA165 | DIODE | |
| D601, 602 | MA4068HTA | DIODE | (GC)⚠ |
| D701-704 | 1N5402BF | DIODE | ⚠ |
| D705, 706 | RL1N4003N02 | DIODE | ⚠ |
| D712 | MA4240H | DIODE | |
| D715, 716 | MA4150M | DIODE | ⚠ |
| D717 | MA4051MTA | DIODE | ⚠ |
| D751-754 | RL1N4003N02 | DIODE | ⚠ |
| D755 | MA4082LTA | DIODE | ⚠ |
| D756 | MA165 | DIODE | |
| D761-764 | RL1N4003N02 | DIODE | ⚠ |
| D781, 782 | RL1N4003N02 | DIODE | ⚠ |
| D802 | MA4100MTA | DIODE | ⚠ |
| D803-806 | 1SS254TA | DIODE | |
| D807 | MA4100MTA | DIODE | ⚠ |
| D831-834 | 1SS254TA | DIODE | |
| D836 | MA4051-L | DIODE | |
| D837 | MA4056HTA | DIODE | ⚠ |
| D838, 839 | 1SS254TA | DIODE | |
| D841-844 | SLR-305VC | L. E. D. | |
| D861, 862 | MA700TA | DIODE | |
| D863, 864 | 1SS254TA | DIODE | |
| | | | |
| | | VARIABLE RESISTOR(S) | |
| | | | |
| VR601, 602 | EVJYV1F03G24 | TREBLE/BASS CONTROL | |
| VR808, 809 | EVNDXAA00B53 | POWER METER ADJ. | |
| | | | |
| | | COIL(S) | |
| | | | |
| L501, 502 | RLQYR73M | COIL | |
| L551, 552 | RLQYR73M | COIL | |
| L701 | RLQZ271M | COIL | (E, EB, EG, GN)⚠ |
| | | | |
| | | TRANSFORMER(S) | |
| | | | |
| PT701 | RTP2N5B003 | POWER TRANSFORMER | (E, EB, EG, GN)⚠ |
| PT701 | RTP1V5E004-W | POWER TRANSFORMER | (GC)⚠ |
| | | | |
| | | LAMP(S) | |
| | | | |
| PL801-806 | XAMR137 | LAMP | |
| | | | |
| | | FUSE(S) | |
| | | | |
| F1 | XBA2C16TB0 | FUSE, 250V T1. 6A | (E, EB, EG, GN)⚠ |
| F1 | XBA2C31TB0 | FUSE, 250V T3. 15A | (GC)⚠ |
| F2 | XBA2C16TB0 | FUSE, 250V T1. 6A | (GC)⚠ |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| F701, 702 | XBA2C16TB0 | FUSE, 250V T1. 6A | ⚠ |
| | | | |
| | | SWITCH(ES) | |
| | | | |
| S701 | ESE37314 | VOLTAGE ADJ. | (GC)⚠ |
| S801 | EVQ21405R | POWER | |
| S802 | EVQ21405R | MODE | |
| S803 | EVQ21405R | TEST | |
| S804 | EVQ21405R | DELAY TIME | |
| S805 | EVQ21405R | CENTER MODE | |
| | | | |
| | | RELAY(S) | |
| | | | |
| RL701 | RSY0013M-0 | RELAY | ⚠ |
| | | | |
| | | CONNECTOR(S) AND SOCKET | |
| | | | |
| CN601 | RJU057W004 | SOCKET(4P) | |
| CN701-708 | RJS1A1101T1 | CONNECTOR(1P) | |
| CN709 | RJS1A1101T1 | CONNECTOR(1P) | (E, EB, EG, GN) |
| CN710 | RJS1A1101T1 | CONNECTOR(1P) | (EB, GN) |
| CN712 | RJS1A1101T1 | CONNECTOR(1P) | (E, EG) |
| CN715 | RJU057W004 | SOCKET(4P) | |
| CN501-1-3 | RJS1A6604 | CONNECTOR(4P) | |
| CN502-1-3 | RJS1A6603 | CONNECTOR(3P) | |
| CN703-1, 2 | RJS1A6604 | CONNECTOR(4P) | |
| CP601 | RJT057W004-1 | CONNECTOR(4P) | |
| CP715 | RJT057W004-1 | CONNECTOR(4P) | |
| JK201 | RJT065K20 | CONNECTOR(20P) | |
| JK351 | SJT3213 | CONNECTOR(2P) | |
| JK702 | SJS702-2 | CONNECTOR(7P) | (GC) |
| | | | |
| | | JACK(S) AND TERMINAL(S) | |
| | | | |
| JK301 | RJJ67TA02 | HEADPHONES | |
| JK501 | RJR0054 | SPEAKER(MAIN) | |
| JK502 | RJH2301MS | SPEAKER(CENTER/SURROUND) | |
| JK701 | SJS9236 | AC INLET | (E, EB, EG, GC)⚠ |
| JK701 | SJSD16-1 | AC INLET | (GN)⚠ |
| | | | |
| | | EARTH PLATE(S) | |
| | | | |
| E501 | SNE1004-2 | EARTH PLATE | |
| E701 | SNE1004-2 | EARTH PLATE | |
| | | | |
| | | FUSE HOLDER(S) | |
| | | | |
| FC1-6 | EYF52BC | FUSE HOLDER | |
| FC7, 8 | EYF52BC | FUSE HOLDER | (GC) |
| | | | |
| | | | |
| | | | |

# ■RESISTORS AND CAPACITORS

**Notes:** * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| | | |
| | | RESISTORS |
| | | |
| R223, 224 | ERDS2TJ332 | 1/4W 3.3K |
| R251 | ERDS2TJ222 | 1/4W 2.2K |
| R253, 254 | ERDS2EJ121 | 1/4W 120 |
| R255 | ERDS2TJ154 | 1/4W 150K |
| R256 | ERDS2TJ105T | 1/4W 1M |
| R259 | ERDS2TJ561 | 1/4W 560 |
| R291, 292 | ERDS2TJ822 | 1/4W 8.2K |
| R301, 302 | ERDS2TJ222 | 1/4W 2.2K |
| R303, 304 | ERDS2TJ333 | 1/4W 33K |
| R305, 306 | ERDS2TJ223 | 1/4W 22K |
| R307, 308 | ERDS2TJ222 | 1/4W 2.2K |
| R309-312 | ERDS2EJ121 | 1/4W 120 |
| R351 | ERDS2TJ183T | 1/4W 18K |
| R352 | ERDS2TJ473 | 1/4W 47K |
| R353 | ERDS2TJ223 | 1/4W 22K |
| R354 | ERDS2TJ104 | 1/4W 100K |
| R355 | ERDS2TJ103 | 1/4W 10K |
| R357 | ERG1SJ100E | 1W 10 |
| R358 | ERG1SJ220E | 1W 22 |
| R359 | ERDS2TJ273 | 1/4W 27K |
| R360 | ERDS2TJ152 | 1/4W 1.5K |
| R361 | ERDS2TJ104 | 1/4W 100K |
| R362 | ERDS2TJ101 | 1/4W 100 |
| R363, 364 | ERDS2TJ103 | 1/4W 10K |
| R365 | ERDS2TJ335T | 1/4W 3.3M |
| R371 | ERDS2TJ683 | 1/4W 68K |
| R372 | ERDS2TJ561 | 1/4W 560 |
| R373 | ERDS2TJ101 | 1/4W 100 |
| R374 | ERDS2TJ472 | 1/4W 4.7K |
| R375 | ERDS2TJ103 | 1/4W 10K |
| R391 | ERDS2TJ473 | 1/4W 47K |
| R501, 502 | ERDS2TJ102 | 1/4W 1K |
| R503-506 | ERDS2TJ563 | 1/4W 56K |
| R507, 508 | ERDS2TJ102 | 1/4W 1K |
| R509, 510 | ERDS2TJ821 | 1/4W 820 |
| R511 | ERDS2TJ334 | 1/4W 330K |
| R512 | ERDS2TJ154 | 1/4W 150K |
| R513 | ERDS2TJ684 | 1/4W 680K |
| R514 | ERD25FJ470 | 1/4W 47 ⚠ |
| R515, 516 | ERDS1FVJ100T | 1/2W 10 ⚠ |
| R517, 518 | ERD25FVJ100T | 1/4W 10 ⚠ |
| R551, 552 | ERDS2TJ222 | 1/4W 2.2K |
| R553, 554 | ERDS2TJ102 | 1/4W 1K |
| R555, 556 | ERDS2TJ104 | 1/4W 100K |
| R557, 558 | ERDS2TJ563 | 1/4W 56K |
| R559, 560 | ERDS2TJ102 | 1/4W 1K |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R561 | ERDS2TJ151 | 1/4W 150 |
| R562 | ERDS2TJ471 | 1/4W 470 |
| R563, 564 | ERDS2TJ563 | 1/4W 56K |
| R565, 566 | ERD25FVJ100T | 1/4W 10 ⚠ |
| R567, 568 | ERDS1FVJ100T | 1/2W 10 ⚠ |
| R569 | ERDS2TJ823T | 1/4W 82K |
| R570 | ERDS2TJ124T | 1/4W 120K |
| R571 | ERDS2TJ823T | 1/4W 82K |
| R572 | ERDS2TJ124T | 1/4W 120K |
| R573 | ERDS2TJ563 | 1/4W 56K |
| R574 | ERDS2TJ564 | 1/4W 560K |
| R575 | ERDS2TJ223 | 1/4W 22K |
| R583, 584 | ERDS2TJ154 | 1/4W 150K |
| R585, 586 | ERDS2TJ105T | 1/4W 1M |
| R587, 588 | ERDS2EJ121 | 1/4W 120 |
| R589 | ERDS2TJ561 | 1/4W 560 |
| R590 | ERDS2TJ334 | 1/4W 330K |
| R591 | ERD2FCVG470T | 1/4W 47 ⚠ |
| R601, 602 | ERDS2TJ472 | 1/4W 4.7K |
| R603, 604 | ERDS2TJ473 | 1/4W 47K |
| R605, 606 | ERDS2TJ123 | 1/4W 12K |
| R607, 608 | ERDS2TJ222 | 1/4W 2.2K |
| R609, 610 | ERDS2TJ821 | 1/4W 820 |
| R611, 612 | ERDS2TJ122 | 1/4W 1.2K |
| R613, 614 | ERDS2TJ683 | 1/4W 68K |
| R615, 616 | ERDS2TJ123 | 1/4W 12K |
| R625, 626 | ERDS2TJ183T | 1/4W 18K |
| R627, 628 | ERDS2TJ123 | 1/4W 12K |
| R631-634 | ERDS2TJ104 | 1/4W 100K |
| R635, 636 | ERDS2TJ100 | 1/4W 10 E, EB, EG, GN |
| R635, 636 | ERDS2TJ223 | 1/4W 22K GC |
| R637, 638 | ERDS2TJ472 | 1/4W 4.7K |
| R639, 640 | ERDS2TJ100 | 1/4W 10 E, EB, EG, GN |
| R639, 640 | ERDS2TJ223 | 1/4W 22K GC |
| R641 | ERDS2TJ333 | 1/4W 33K GC |
| R643, 644 | ERDS2TJ332 | 1/4W 3.3K GC |
| R651, 652 | ERDS2TJ222 | 1/4W 2.2K |
| R653, 654 | ERDS2EJ121 | 1/4W 120 |
| R655 | ERDS2TJ561 | 1/4W 560 |
| R657, 658 | ERDS2TJ224T | 1/4W 220K |
| R701 | ERD2FCVJ4R7T | 1/4W 4.7 ⚠ |
| R702 | ERQ16NKW2R2E | 1/6W 2.2 ⚠ |
| R703, 704 | ERDS2TJ562 | 1/4W 5.6K |
| R705 | ERDS2TJ333 | 1/4W 33K |
| R706 | ERDS2TJ100 | 1/4W 10 |
| R709 | ERG1SJ331E | 1W 330 |
| R711 | ERG1SJ391E | 1W 390 |
| R713 | ERX1SJ6R8E | 1W 6.8 |
| R716 | ERDS2TJ392T | 1/4W 3.9K |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R717 | ERDS2TJ473 | 1/4W 47K |
| R731 | ERDS2TJ104 | 1/4W 100K |
| R752 | ERDS2TJ822 | 1/4W 8.2K |
| R761-764 | ERDS2TJ1R0 | 1/4W 1.0 |
| R765 | ERDS2TJ471 | 1/4W 470 |
| R766 | ERDS2TJ563 | 1/4W 56K |
| R777 | ERX1SJ6R8E | 1W 6.8 |
| R778, 779 | ERX1SJ5R6E | 1W 5.6 |
| R780 | ERDS2TJ822 | 1/4W 8.2K |
| R783 | ERDS2TJ221 | 1/4W 220 |
| R791, 792 | ERDS2TJ101 | 1/4W 100 |
| R801, 802 | ERDS2TJ272T | 1/4W 2.7K |
| R803, 804 | ERDS2TJ104 | 1/4W 100K |
| R805, 806 | ERDS2TJ155 | 1/4W 1.5M |
| R807, 808 | ERDS2TJ331 | 1/4W 330 |
| R811, 812 | ERDS2TJ821 | 1/4W 820 |
| R816 | ERDS2TJ104 | 1/4W 100K |
| R817, 818 | ERDS2TJ221 | 1/4W 220 |
| R819 | ERDS2TJ104 | 1/4W 100K |
| R821, 822 | ERDS2TJ123 | 1/4W 12K |
| R823, 824 | ERDS2TJ154 | 1/4W 150K |
| R825, 826 | ERDS2TJ223 | 1/4W 22K |
| R827, 828 | ERDS2TJ102 | 1/4W 1K |
| R829 | ERDS2TJ222 | 1/4W 2.2K |
| R831 | ERDS2TJ821 | 1/4W 820 |
| R832 | ERDS2TJ102 | 1/4W 1K |
| R833 | ERDS2TJ122 | 1/4W 1.2K |
| R834 | ERDS2TJ152 | 1/4W 1.5K |
| R836, 837 | ERDS2TJ472 | 1/4W 4.7K |
| R838 | ERDS2TJ332 | 1/4W 3.3K |
| R841, 842 | ERDS2TJ332 | 1/4W 3.3K |
| R843 | ERDS2TJ102 | 1/4W 1K |
| R844 | ERDS2TJ332 | 1/4W 3.3K GC |
| R845, 846 | ERDS2TJ102 | 1/4W 1K |
| R847 | ERDS2TJ221 | 1/4W 220 |
| R848 | ERDS2TJ104 | 1/4W 100K |
| R849, 850 | ERDS2TJ102 | 1/4W 1K |
| R851 | ERDS2TJ331 | 1/4W 330 |
| R852 | ERDS2TJ391 | 1/4W 390 |
| R853 | ERDS2TJ392T | 1/4W 3.9K |
| R855, 856 | ERDS2TJ393 | 1/4W 39K |
| R857, 858 | ERDS2TJ331 | 1/4W 330 |
| R861, 862 | ERDS2TJ681 | 1/4W 680 |
| R863 | ERDS2TJ222 | 1/4W 2.2K |
| R864, 865 | ERDS2TJ221 | 1/4W 220 |
| R870 | ERDS2TJ222 | 1/4W 2.2K |
| R871, 872 | ERDS2TJ272T | 1/4W 2.7K |
| R879 | ERDS2TJ221 | 1/4W 220 |
| R885, 886 | ERDS2EJ121 | 1/4W 120 |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R887, 888 | ERDS2TJ152 | 1/4W 1.5K |
| | | |
| | | CAPACITORS |
| | | |
| C251 | RCE0JKA221BV | 6.3V 220U |
| C301, 302 | RCE1CKA100BG | 16V 10U |
| C303-306 | ECBT1H101KB5 | 50V 100P |
| C307, 308 | RCE1CKA220BG | 16V 22U |
| C309, 310 | RCE1HKA3R3BG | 50V 3.3U |
| C353 | ECEA1HKA2R2B | 50V 2.2U |
| C361 | ECEA1AKA221B | 10V 220U |
| C362, 363 | RCE1CKA100BG | 16V 10U |
| C364 | ECBT1E103ZF | 25V 0.01U |
| C371 | RCE0JKA101BV | 6.3V 100U |
| C372 | ECBT1E103ZF | 25V 0.01U |
| C381, 382 | ECBT1E103ZF | 25V 0.01U |
| C397, 398 | ECBT1E103ZF | 25V 0.01U |
| C501, 502 | ECA1HAP3R3B | 50V 3.3U |
| C503, 504 | ECBT1C152KR5 | 16V 1500P |
| C505, 506 | ECBT1H150J5 | 50V 15P |
| C507, 508 | ECBT1C682KR5 | 16V 6800P |
| C509, 510 | RCE1CKA220BG | 16V 22U |
| C511, 512 | ECBT1C122KR5 | 16V 1200P |
| C513 | ECA1VM101B | 35V 100U |
| C514 | ECA2AAP100B | 100V 10U |
| C515, 516 | ECFR1H104ZF | 50V 0.1U |
| C551, 552 | ECBT1H101KB5 | 50V 100P |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| C553, 554 | RCE1HKA3R3BG | 50V 3.3U |
| C555, 556 | ECBT1H331KB5 | 50V 330P |
| C557, 558 | ECBT1C122KR5 | 16V 1200P |
| C561, 562 | ECBT1H150J5 | 50V 15P |
| C563, 564 | RCE1HKA4R7BG | 50V 4.7U |
| C565, 566 | ECFR1H104ZF | 50V 0.1U |
| C567, 568 | RCE0JKA470BG | 6.3V 47U |
| C569 | ECA2AAP100B | 100V 10U |
| C571 | RCE0JKA101BV | 6.3V 100U |
| C572 | ECBT1E223ZF | 25V 0.022U |
| C601, 602 | RCE1HKA3R3BG | 50V 3.3U |
| C603-606 | ECBT1H101KB5 | 50V 100P |
| C607, 608 | ECBT1H151KB5 | 50V 150P |
| C609, 610 | ECBT1E103ZF | 25V 0.01U |
| C611, 612 | RCE1HKA3R3BG | 50V 3.3U |
| C613, 614 | RCE1CKA100BG | 16V 10U |
| C615, 616 | ECEA1HKA010B | 50V 1U |
| C617, 618 | ECQV1H823JM3 | 50V 0.082U |
| C623, 624 | ECBT1E103ZF | 25V 0.01U GC |
| C626 | ECBT1E103ZF | 25V 0.01U GC |
| C631, 632 | RCE1HKA3R3BG | 50V 3.3U |
| C633, 634 | ECBT1C822KS5 | 16V 8200P |
| C653 | RCE1CKA101BV | 16V 100U |
| C701, 702 | ECES1H682VNG | 50V 6800U ⚠ |
| C703, 704 | ECEA1CKA330B | 16V 33U |
| C705, 706 | ECKR1H103ZF5 | 50V 0.01U |
| C707 | ECA1HM470B | 50V 47U ⚠ |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| C710 | ECBT1E103ZF | 25V 0.01U |
| C711 | ECQE1104KF3 | 100V 0.1U |
| C712 | ECBT1E223ZF | 25V 0.022U |
| C714 | ECKR1H103ZF5 | 50V 0.01U |
| C715 | ECA1VHG471B | 35V 470U |
| C731 | ECEA1HKN010B | 50V 1U |
| C761 | ECA1EM102B | 25V 1000U ⚠ |
| C762 | ECBT1E103ZF | 25V 0.01U |
| C781 | ECA1EM101B | 25V 100U ⚠ |
| C799 | ECBT1H104ZF5 | 50V 0.1U |
| C801, 802 | ECEA1EKN3R3B | 25V 3.3U |
| C803, 804 | ECEA1HKA2R2B | 50V 2.2U |
| C805 | RCE1HKA4R7BG | 50V 4.7U |
| C806 | RCE0JKA221BV | 6.3V 220U |
| C808, 809 | ECBT1E223ZF | 25V 0.022U |
| C810 | RCE1HKA4R7BG | 50V 4.7U |
| C831 | RCE1CKA100BG | 16V 10U |
| C832 | ECBT1E103ZF | 25V 0.01U |
| C833 | ECBT1H104ZF5 | 50V 0.1U |
| C834, 835 | ECBT1H471KB5 | 50V 470P |
| C836, 837 | RCE1HKA3R3BG | 50V 3.3U |
| C855, 856 | ECBT1C682KR5 | 16V 6800P |
| C905, 906 | ECBT1H101KB5 | 50V 100P |
| C1101, 1102 | ECBT1H473ZF5 | 50V 0.047U |
| C1103-1106 | ECBT1H102KB5 | 50V 1000P |
| C1107, 1108 | ECBT1H473ZF5 | 50V 0.047U |
| C1109-1111 | ECBT1H102KB5 | 50V 1000P |

# ■ REPLACEMENT PARTS LIST

**Notes:** * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* Remote Control Ass'y: Supply period for three years from termination of production.
* The "(SF)" mark denotes the standard part.

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| | | PACKING MATERIAL | |
| | | | |
| P1 | RPG2819 | PACKING CASE (SYSTEM) | (E, EG) |
| P1 | RPG2776 | PACKING CASE (SYSTEM) | (EB) |
| P1 | RPG2820 | PACKING CASE (SYSTEM) | (GC) |
| P1 | RPG2822 | PACKING CASE (SYSTEM) | (GN) |
| P2 | RPG2706 | PACKING CASE (AMPLIFIER) | |
| P2 | RPG2708 | PACKING CASE (TUNER) | |
| P2 | RPG2777 | PACKING CASE (CD) | |
| P2 | RPG2707 | PACKING CASE (DECK) | |
| P3 | RPN0949 | CUSHION (AMPLIFIER) | |

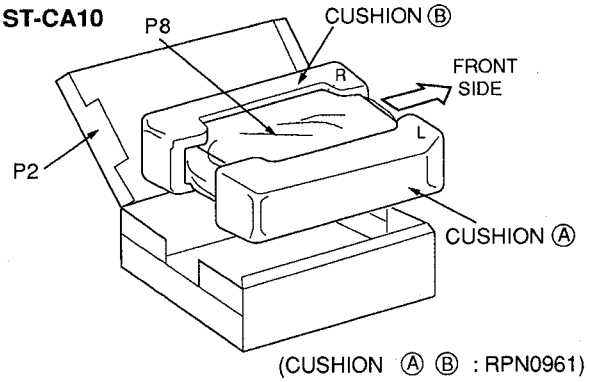
| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| P3 | RPN0961 | CUSHION (TUNER) | |
| P3 | RPN0951 | CUSHION (CD) | |
| P3 | RPN0950 | CUSHION (DECK) | |
| P4 | RPQ0164 | PAD | |
| P5 | RPF0134 | PROTECTION BAG (F. B.) | |
| P6 | SQZD3 | AREA LABEL | (E) |
| P6 | SQZD7 | AREA LABEL | (EB) |
| P6 | SQZD6 | AREA LABEL | (EG) |
| P6 | RQLA0066 | AREA LABEL | (GC) |
| P6 | RQLA0067 | AREA LABEL | (GN) |
| P7 | RPQ0541 | SPACER | |
| P8 | SPP740 | PROTECTION BAG (UNIT) | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| | | ACCESSORIES | |
| | | | |
| A1 | RAK-CH744WH | REMOTE CONTROL TRANSMITTER | (E, EG) |
| A1 | RAK-CH745WH | REMOTE CONTORL TRANSMITTER | (EB, GC, GN) |
| A1-1 | RKKD020-K | BATTERT COVER FOR R.C.T. | |
| A2 | REED393 | SPEAKER CORDS | |
| A3 | REXD608 | FLAT CABLE(SHORT)(20P) | |
| A4 | REXD660 | FLAT CABLE(MIDDLE)(19P) | |
| A5 | REXD661 | FLAT CABLE(LONG)(15P) | |
| A6 | RJAD019-2K | AC POWER SUPPLY CORD | (E, EG, GC)⚠(SF) |
| A6 | RJAD049-K | AC POWER SUPPLY CORD | (EB)⚠ |
| A6 | RJAD036-K | AC POWER SUPPLY CORD | (GN)⚠ |
| A7 | RQAD117 | WARRANTY CARD | (E, EB, EG) |
| A7 | RQX7433ZA | WARRANTY CARD | (GN) |
| A8 | RQCB0169 | SERVICENTER LIST | |
| A9 | RFKSECA10E-K | INSTRUCTION MANUAL ASS'Y | (E) |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| A9 | RFKSECA10EBK | INSTRUCTION MANUAL ASS'Y | (EB) |
| A9 | RQT3264-D | INSTRUCTION MANUAL | (EG) |
| A9 | RQT3265-G | INSTRUCTION MANUAL | (GC) |
| A9 | RQT3266-B | INSTRUCTION MANUAL | (GN) |
| A10 | RSAD007 | FM INDOOR ANTENNA | (E, EB, EG) |
| A10 | RSAD006 | FM INDOOR ANTENNA | (GC, GN) |
| A11 | RSAD012 | AM(LW/MW)LOOP ANTENNA | |
| A11-1 | RMND244 | ANTENNA HOLDER | |
| A11-2 | XTN3+12AFZ | MOUNTING SCREW | |
| A12 | SJP9009 | ATTACHMENT PLUG | (EB)⚠ |
| A13 | RQLA0134 | VOLTAGE CAUTION LABEL | (GC) |
| A14 | SJP5213-1 | POWER PLUG ADAPTOR | (GC)⚠ |
| | | | |
| | | <GREASE OR JIG/TOOL> | |
| | | GREASE | |
| | | | |
| SA1 | RFKX0002 | COMPOUND GREASE | |

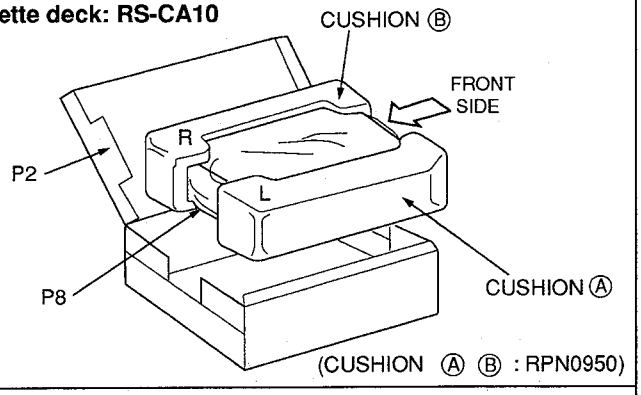
# ■PACKAGING

**Tuner: ST-CA10**



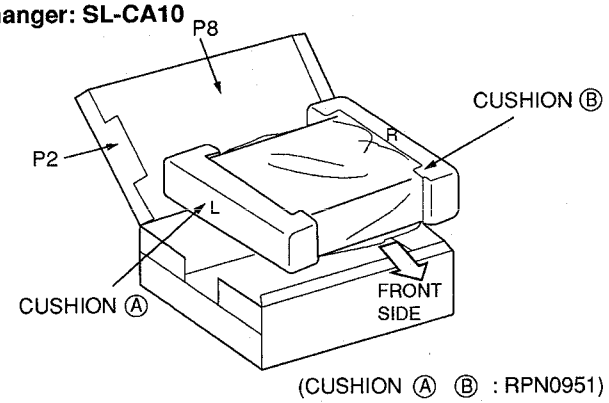

(CUSHION Ⓐ Ⓑ : RPN0961)

**Cassette deck: RS-CA10**



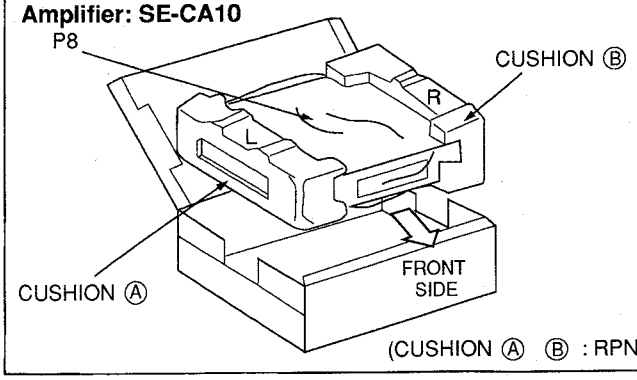

(CUSHION Ⓐ Ⓑ : RPN0950)

**CD Changer: SL-CA10**



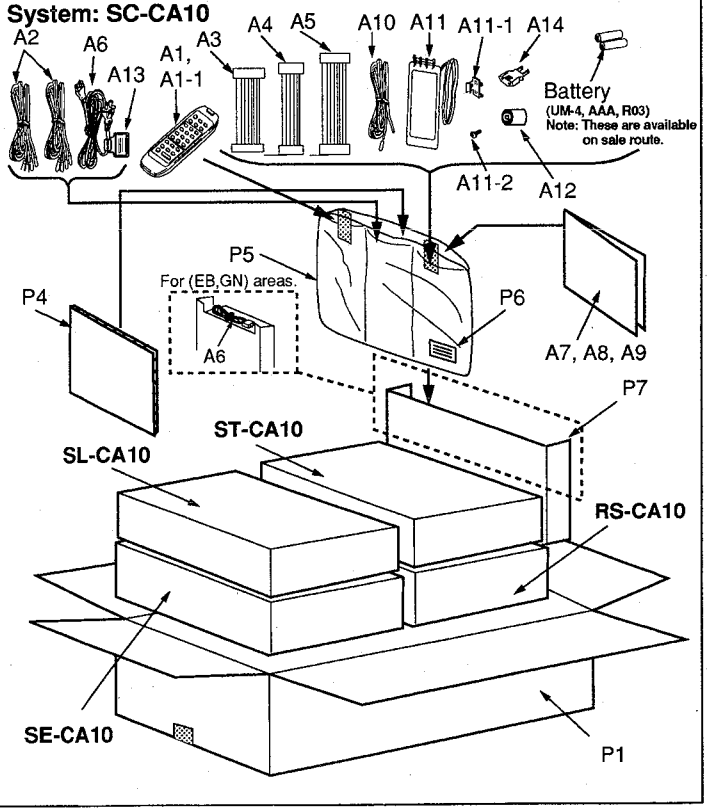

(CUSHION Ⓐ Ⓑ : RPN0951)

**Amplifier: SE-CA10**




(CUSHION Ⓐ Ⓑ : RPN0949)

**System: SC-CA10**






Printed in Japan
H951212000 NH/HH/TN